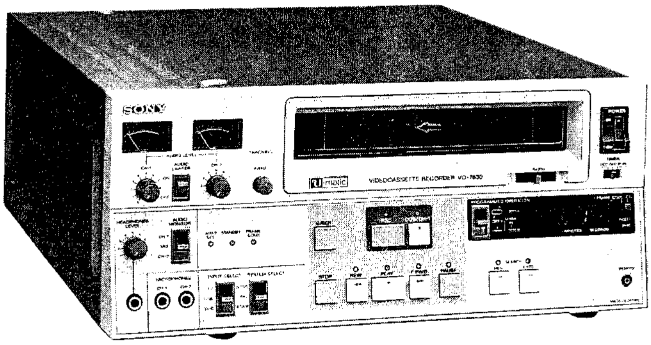
U-matic

VIDEO CASSETTE RECORDER

V13732

VO-7630



SONY

SERVICE MANUAL

SPECIFICATIONS

For UC

System

Video recording	Rotary two-head helical scan system Luminance: FM recording Color signal: converted subcarrier direct recording
Video signal system	Recording: CCIR standards PAL or SECAM color system Playback: CCIR standards PAL or SECAM color/EIA standards NTSC$_{4.43}$ color system

Video

Inputs	VIDEO IN (BNC type) ×1 1.0 Vp-p $^{+1}_{-0.5}$ Vp-p, 75 ohms, unbalanced, sync negative DUB IN (7-pin) ×1 TV (8-pin) ×1
Outputs	VIDEO OUT 1, 2 (BNC type) ×1 each 1.0 Vp-p ±0.2 Vp-p, 75 ohms, unbalanced, sync negative DUB OUT (7-pin) ×1 TV (8-pin) ×1
Horizontal resolution	250 lines (both B/W and color)
S/N	Color: more than 46 dB Luminance (Y): more than 48 dB
Recording level control	Automatic

Audio

Inputs	AUDIO LINE IN CH-1/L, CH-2/R (phono jack) ×1 each −10 dB, 47 k ohms MICROPHONE CH-1/L, CH-2/R (phone jack) ×1 each −60 dB, 3 k ohms TV (8-pin) ×1
Outputs	AUDIO LINE OUT CH-1/L, CH-2/R (phono jack) ×1 each −5 dB (at 47k ohms load) AUDIO MONITOR (phono jack) ×1 −5 dB (at 47 k ohms load) TV (8 pin) ×1 HEADPHONES (stereo phone jack) For 8-ohm headphones Level adjustable (from −26 to −46 dB)
S/N	50 dB (both channel 1 and 2 at 3% distortion)
Frequency response	50 to 15,000Hz (both audio channel 1 and 2)
Recording level control	Manual or limiter selectable

Other functions

Memory backup of programmed operation	3 years from shipment
Pause	A still picture is obtained with long pause function
Search	Possible in both the forward and reverse directions With RM-580 and RM-500: picture serach with 8 times normal speed (both KCA and KCS tapes)
Tracking control	Possible
Skew control	Possible
Sync system	Automatic switching between internal and external
Dropout compensator	Built-in

Tape transport

Tape speed	95.3 mm/sec.
Recording and playback time	Approx. 60 minutes (with KCA-60)
Fast forward and rewind time	Within 4 minutes (with KCA-60)
Wow and flutter	Less than ±0.23% p-p (DIN)
Tape compatibility	U-matic videocassette tapes
Usable tapes	KCA, KCS, KSP, KSP-S type

General

Power requirements	90-132 V AC, 45-66 Hz
Power consumption	70 W (with the RM-580)
Operating position	Horizontal
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 × 192 × 492 mm (w/h/d) ($16\frac{3}{4} \times 7\frac{5}{8} \times 19\frac{3}{8}$ inches) including projecting parts and controls
Weight	Approx. 17 kg (39 lb 8 oz)
Supplied accessories	Operating instructions (1) AC power cord (1)

Design and specifications are subject to change without notice.

Optional accessories

BKU-701 computer interface board
FCG-700 frame code generator
RX-707 auto search control unit (for RS-232C interface)
RX-353CE, RX-303CE auto search control unit (for 33-pin interface)
RM-770 remote control unit (for REMOTE connector)
RM-690 remote control unit (for REMOTE connector)
RM-580, RM-500 remote control unit (for 33-pin interface)
RM-555 multi remote control unit
RMM-507 rack mount kit

SPECIFICATIONS

For EK

System

Video recording	Rotary two-head helical scan system Luminance: FM recording Color signal: converted subcarrier direct recording
Video signal system	Recording: CCIR standard PAL or SECAM color system Playback: CCIR standards PAL or SECAM color/EIA standard NTSC$_{4.43}$ color system

Video

Inputs	VIDEO IN (BNC type) ×1 1.0 Vp-p $^{+1}_{-0.5}$ Vp-p, 75 ohms, unbalanced, sync negative DUB IN (7-pin) ×1 TV (8-pin) ×1
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Horizontal resolution	250 lines (both B/W and color)
S/N	Color: more than 46 dB Luminance (Y): more than 48 dB
Recording level control	Automatic

Audio

Inputs	AUDIO LINE IN CH-1/L, CH-2/R (phono jack) ×1 each −10 dB, 47 k ohms MICROPHONE CH-1/L, CH-2/R (phone jack) ×1 each −60 dB, 3 k ohms TV (8-pin) ×1
Outputs	AUDIO LINE OUT CH-1/L, CH-2/R (phono jack) ×1 each −5 dB (at 47 k ohms load) AUDIO MONITOR (phono jack) ×1 −5 dB (at 47 k ohms load) TV (8 pin) ×1 HEADPHONES (stereo phone jack) For 8-ohm headphones Level adjustable (from −26 to −46 dB)
S/N	50 dB (both channel 1 and 2 at 3% distortion)
Frequency response	50 to 15,000Hz (both audio channel 1 and 2)
Recording level control	Manual or limiter selectable

Other functions

Memory backup of programmed operation	3 years from shipment
Pause	A still picture is obtained with long pause function
Search	Possible in both the forward and reverse directions With RM-580 and RM-500: picture serach with 8 times normal speed (both KCA and KCS tapes)
Tracking control	Possible
Skew control	Possible
Sync system	Automatic switching between internal and external
Dropout compensator	Built-in

Tape transport

Tape speed	95.3 mm/sec.
Recording and playback time	Approx. 60 minutes (with KCA-60)
Fast forward and rewind time	Within 4 minutes (with KCA-60)
Wow and flutter	Less than ±0.23% p-p (DIN)
Tape compatibility	U-matic video cassette tapes
Usable tapes	KCA, KCS, KSP, KSP-S type

General

Power requirements	210-250 V AC, 45-66 Hz
Power consumption	65 W (with the RM-580 and RF kit)
Operating position	Horizontal
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 × 192 × 492 mm (w/h/d) (16¾ × 7 ⅝ × 19⅜ inches) including projecting parts and controls
Weight	Approx. 17 kg (39 lb 8 oz)
Supplied accessories	Operating instructions (1) RF modulator compartment cover (1) AC power cord (1)

Design and specifications are subject to change without notice.

Optional accessories

BKU-701 computer interface board
FCG-700 frame code generator
RX-707 auto search control unit (for RS-232C interface)
RX-353CE, RX-303CE auto search control unit (for 33-pin interface)
RM-770 remote control unit (for REMOTE connector)
RM-690 remote control unit (for REMOTE connector)
RM-580, RM-500 remote control unit (for 33-pin interface)
RM-555 multi remote control unit
RFK-660UCE/660UB/660UF/660CH RF kit
RMM-507 rack mount kit

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SECTION 1
GENERAL DESCRIPTION

1-1. FEATURES

Compact, lightweight design

Many versatile features are provided in a compact, lightweight package. Thanks to its small footprint, the VO-7630 can be set up almost everywhere and rack installation is easily possible.

PAL and SECAM recording both possible

Recording and playback of the signal using PAL and SECAM color and 625-line/50-field monochrome system standards are possible. Playback of a videocassette recorded using NTSC 4.43 color and 525-line/60-field monochrome system standards is also possible.

Programmed operation

Any desired point on the tape can be quickly located. A specific section may be played back repeatedly.

RS-232C interface

A simple circuit board replacement provides an RS-232C interface, which permits remote control operations from an optional search control unit, such as the Sony RX-707, or a computing device with and RS-232C interface capability.

LED time counter

The time counter reads out the CTL signals recorded on a tape and the LEDs indicate the tape running time in seconds and minutes. These are useful to check the recording time of a material and the remaining time of a tape.

When a tape on which frame codes have been recorded is played with an optional BKU-701 computer interface board attached to this unit, the time counter shows the current tape position in frame codes (absolute address).

Automatic control of video recording level

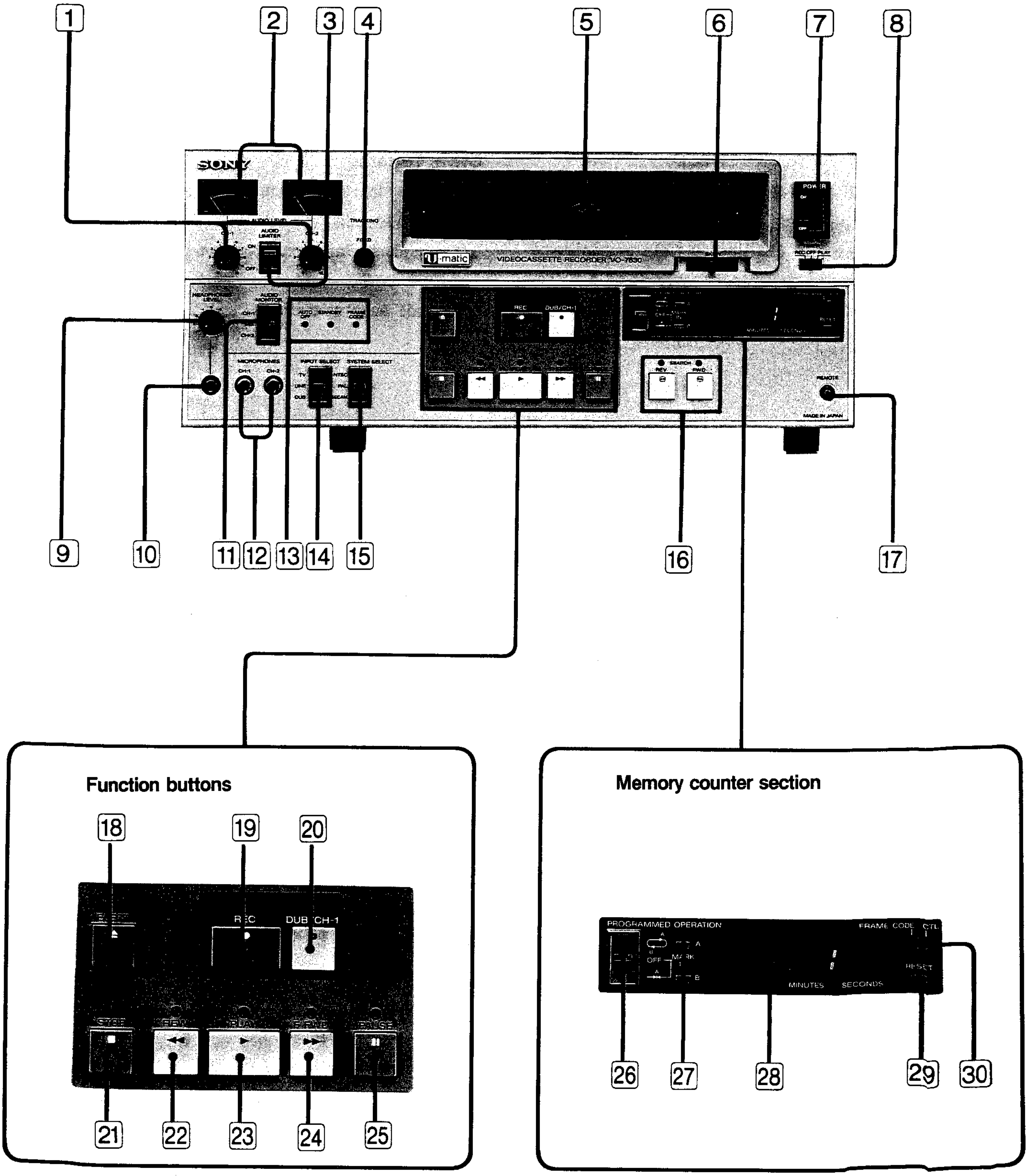
The automatic gain control (AGC) circuit maintains the proper video level assuring optimum video recording.

Other features

- Search in both directions at about 5 times normal speed.
- Long pause function for tape protection.
- AUTO OFF indicator shows moisture condensation.
- Overall easy operation.

1-2. LOCATION OF PARTS AND CONTROLS

FRONT PANEL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16
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SONY
AUDIO LEVEL
CH-1
CH-2
AUDIO LIMITER
ON
OFF
TRACKING
FIXED
U-matic
VIDEOCASSETTE RECORDER VO-7630
POWER
REC
DUB/CH-1
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AUDIO MONITOR
MICROPHONES
INPUT SELECT
SYSTEM SELECT
SEARCH
REV
FWD
REMOTE
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FRAME CODE
CTL
RESET
MINUTES
SECONDS
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1 AUDIO LEVEL controls

2 Audio level meters

Audio recording level is shown in recording and audio playback level in playback.

3 AUDIO LIMITER switch

ON	The audio recording limiter circuit is activated to minimize sudden surges of input signals and perform recording with low sound distortion. Microphone recordings shall be performed with this setting.
OFF	The limiter circuit is deactivated, enabling a manual recording level adjustment.

4 TRACKING control

Normally set this control at the center FIXED position. Should noise, snow or streaks appear in a playback picture recorded on another machine, turn this control so that the best possible picture is obtained.

- Do not move this control from the center FIXED position while recording.

5 Cassette compartment

6 SKEW lever

Normally set this lever at the center position.
When "hooking" distortion appears in the upper part of a playback picture, slide this lever to the left or right to obtain a normal picture.

- Do not move this lever while recording.

7 POWER switch

8 TIMER switch

For automatic recording and playback using an optional timer.
Set this switch to OFF when no timer is used.

9 HEADPHONES LEVEL control

10 HEADPHONES connector (stereo phone jack)

11 AUDIO MONITOR switch

Select the sound to be monitored through headphones or a speaker of a video monitor.

12 MICROPHONES CH-1 and CH-2 connectors (phone jacks)

13 Indicator section

AUTO OFF	Lights at power-on when moisture is condensed inside the unit. While this indicator is lit, any cassette cannot be loaded.
STANDBY	Lights while a tape is being threaded from or unthreaded to the cassette inside the unit.
FRAME CODE	Lights when a tape on which frame codes have been recorded is played back or when a video signal with frame codes is in an E-to-E mode, with a BKU-701 attached to this unit.

14 INPUT SELECT switch

Select a signal to be recorded.

TV	When recording a signal connected to the 8-pin TV connector.
LINE	When recording a signal connected to the BNC type VIDEO IN and the phono type AUDIO IN connectors.
DUB	When recording a signal connected to the DUB IN and the AUDIO IN connectors.

15 SYSTEM SELECT switch

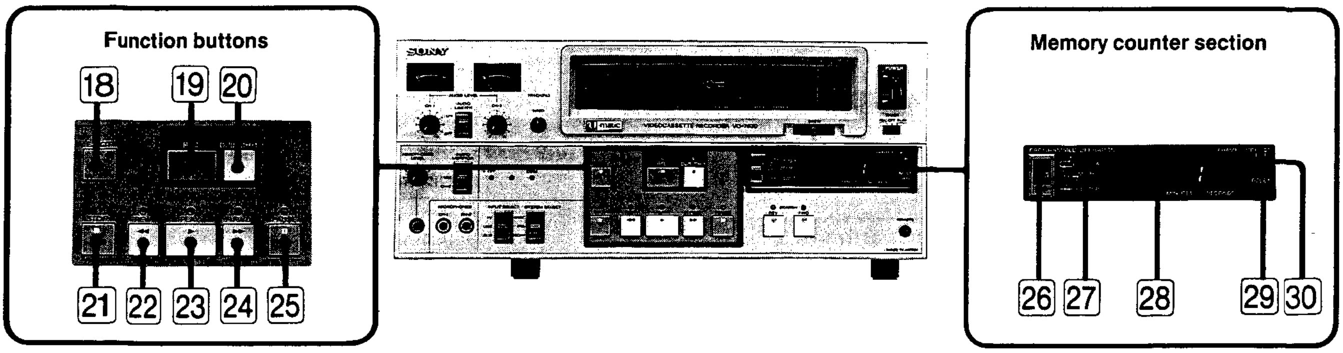
Selects the video signal system.
NTSC: For playback of a videocassette recorded using the EIA standard NTSC4.43 color system.
PAL: For recording and playback of a videocassette recorded using the CCIR standard PAL color system.
SECAM: For recording and playback of a videocassette recorded using the CCIR standard SECAM color system.

16 SEARCH buttons and indicators

REV ⏪ (Search in reverse direction)
FWD ⏩ (Search in forward direction)
The SEARCH operation allows viewing of the playback picture at about 5-times normal speed, so that a particular point can be quickly located.

17 REMOTE connector (special minijack)

Connect to the optional RM-770 remote control unit via a connection cable or a wireless receiver.
Recording, playback, fast forward, rewind and search operations can be remotely controlled.



Function buttons

18 EJECT ⏏ button

19 REC ● (recording) button/lamp
For recording, press this button simultaneously with the PLAY ▶ button.

20 DUB/CH-1 ⊖ (audio dubbing) button/lamp
For adding sound to a tape on which video signal has been previously recorded, press this button simultaneously with the PLAY ▶ button. The sound will be recorded on audio channel 1.

21 STOP ■ button

22 REW ◀◀ (rewind) button/lamp

23 PLAY ▶ (playback) button/lamp

24 F FWD ▶▶ (fast forward) button/lamp

25 PAUSE ❚❚ button/lamp

Memory counter section

26 PROGRAMMED OPERATION switch

A⟲B	For repeatedly playing a particular portion or for checking the point memorized by the MARK IN A and B buttons.
OFF	For normal operation without using any programmed operation. (When the unit is to be controlled from a remote control unit via the REMOTE connector, be sure to set this switch to OFF.) Or for memorizing points on the MARK IN A and B buttons for a programmed operation.
→A←	For locating a point memorized with the MARK IN A button. • If no point is memorized, the tape stops at the point indicated by "0" on the time counter.

27 MARK IN A and B buttons

Press to memorize the time counter value at that point. You can memorize only one point on each button. If the button is pressed several times, only the last point will be memorized.

When a tape on which frame codes have been recorded is used with an optional BKU-701 attached to this unit, two kinds of data, one CTL and one frame code, can be memorized on each button by changing the FRAME CODE/CTL switch setting.

28 Time counter

29 RESET button

This button has the following three functions.

Clearing the time counter indication

The time counter indication will be set to "0" when this button is pressed.

When a BKU-701 is attached, the time counter indication will be set to "0" when this button is pressed with the FRAME CODE/CTL switch set at CTL.

Clearing the memories on the MARK IN A and B buttons

When the PROGRAMMED OPERATION switch is set at OFF or $\rightarrow\overset{A}{|}\leftarrow$, the points memorized by the MARK IN A and B buttons will be cleared and "0" will be memorized on both buttons, when the RESET button is pressed.

When the BKU-701 is attached, perform this operation after setting the FRAME CODE/CTL switch to CTL.

Displaying the rotation time of the head drum

When this button is kept pressed for more than 2 seconds with the PROGRAMMED OPERATION switch set at $\underset{B}{\overset{A}{\circlearrowright}}$, the duration of the head drum rotation will be indicated in fifties of hours on the time counter.

30 FRAME CODE/CTL switch

Selects the time counter indication. See below.

When no BKU-701 is attached

In recording and playback

FRAME CODE/CTL switch setting	Time counter indication
CTL	Tape running time in seconds and minutes (Relative address indication)
FRAME CODE	

When a BKU-701 is attached

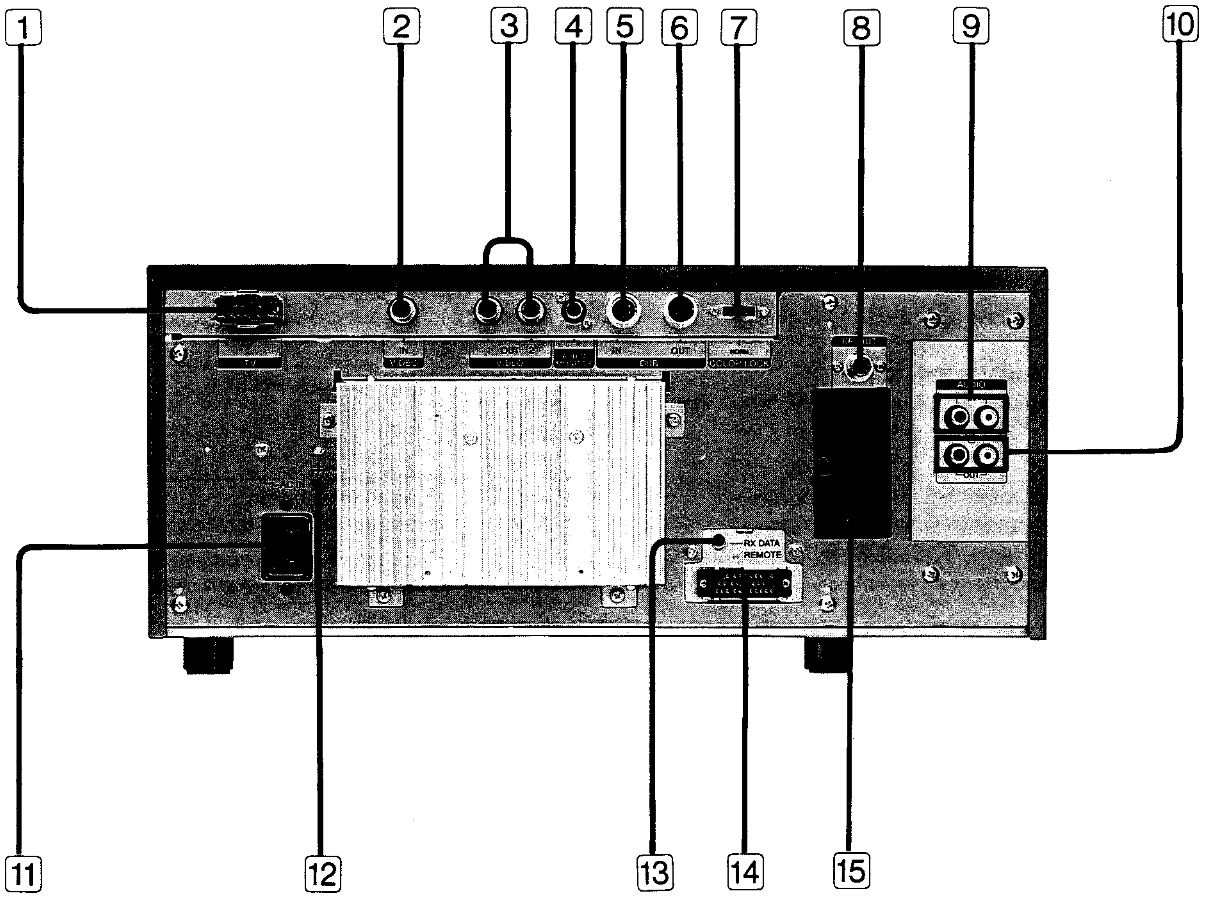
In recording and playback of the video signal in which frame codes have been inserted

FRAME CODE/CTL switch setting	Time counter indication
FRAME CODE	Frame code numbers (Absolute address indication)
CTL	Tape running time in seconds and minutes (Relative address indication)

In recording and playback of the video signal in which no frame code has been inserted

FRAME CODE/CTL switch setting	Time counter indication
FRAME CODE	Frame numbers obtained by counting and converting the CTL signal
CTL	Tape running time in seconds and minutes

REAR PANEL


1
2
3
4
5
6
7
8
9
10
TV
IN
1 OUT 2
VIDEO
IN
OUT
DUB
NORM
COLOR LOCK
AUDIO
OUT
AC IN
RX DATA
REMOTE
11
12
13
14
15

NOTE: For UC
8 15: Not used

[1] TV (monitor) connector (8-pin connector)
Accepts a video monitor having an 8-pin VTR connector. All the VIDEO IN, VIDEO OUT, AUDIO LINE IN and AUDIO LINE OUT connections can be replaced with a single cable connection here. When this connector is used, audio signal will be recorded on audio channel 2 only. In playback, the channel selected by the AUDIO MONITOR switch will be heard through the speaker on the video monitor.

[2] VIDEO IN connector (BNC type)

[3] VIDEO OUT 1 and 2 connectors (BNC type)

[4] AUDIO MONITOR output connector (phono jack)
Supplies an audio signal selected by the AUDIO MONITOR switch on the front panel.

[5] DUB IN connector (7 pin)*
When duplicating a tape using a player with a dubbing connector, the video signal is connected using this connector.

[6] DUB OUT connector (7 pin)*
When duplicating a tape using a recorder with a dubbing connector, the video signal is connected using this connector.

[7] COLOR LOCK switch
As a rule, set to NORMAL.
If the playback picture has no color or if the hue is abnormal, set the switch to the left or right position marked [●].

[8] RF OUT connector (For UC: Not used)
Feeds out video and audio signals as a modulated TV signal. Connect it to the antenna terminal of a TV receiver.

[9] AUDIO LINE IN CH-1/L and CH-2/R connectors (phono jack)

[10] AUDIO LINE OUT CH-1/L and CH-2/R connectors (phono jack)

[11] AC IN connector

[12] Ground terminal

[13] RX DATA connector (minijack)
For recording data or reading recorded data by an RX-353CE or RX-303CE auto search control unit.

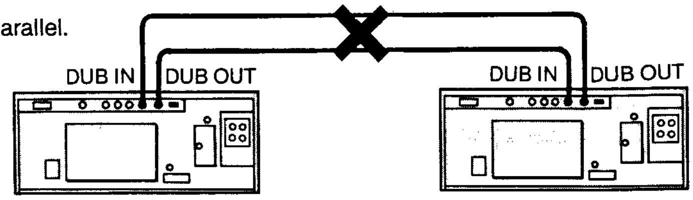
[14] REMOTE connector (33-pin)
Connect an optional editing control unit, auto search control unit, or remote control unit to remotely control the recorder.

- Before connecting a remote control cable, check whether the connector is male or female.
- A 20-pin connector can also be connected without using any plug adaptor.

[15] RF modulator compartment (For UC: Not used)
Insert an optional RF modulator here to monitor playback picture and sound on a TV receiver. (A compartment cover is supplied with this unit.)

- An RF modulator converts the video and audio signals read out from a tape into a TV signal.

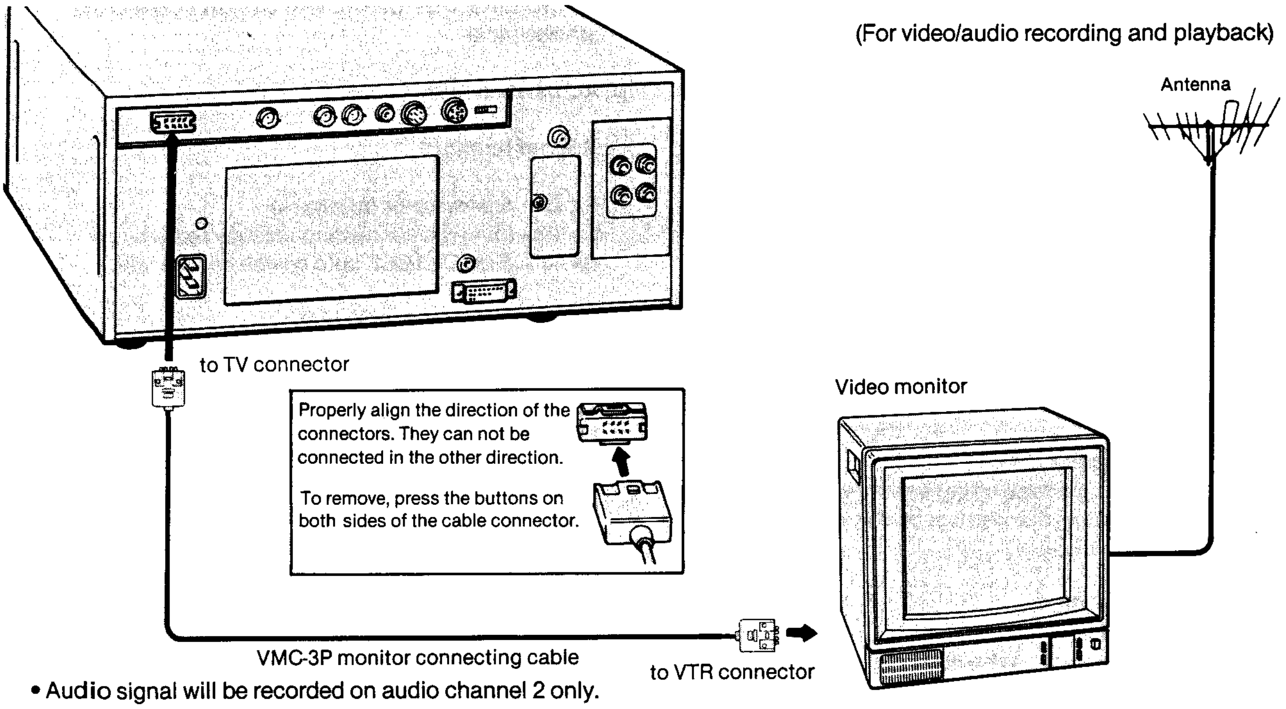
*** Note on DUB connectors**
Do not connect the dubbing connectors in parallel.



1-3. CONNECTION

1-3-1. Connection to a Video Monitor

FOR CONNECTING A VIDEO MONITOR WITH AN 8-PIN VTR CONNECTOR


Antenna
to TV connector
Video monitor
VMC-3P monitor connecting cable
to VTR connector

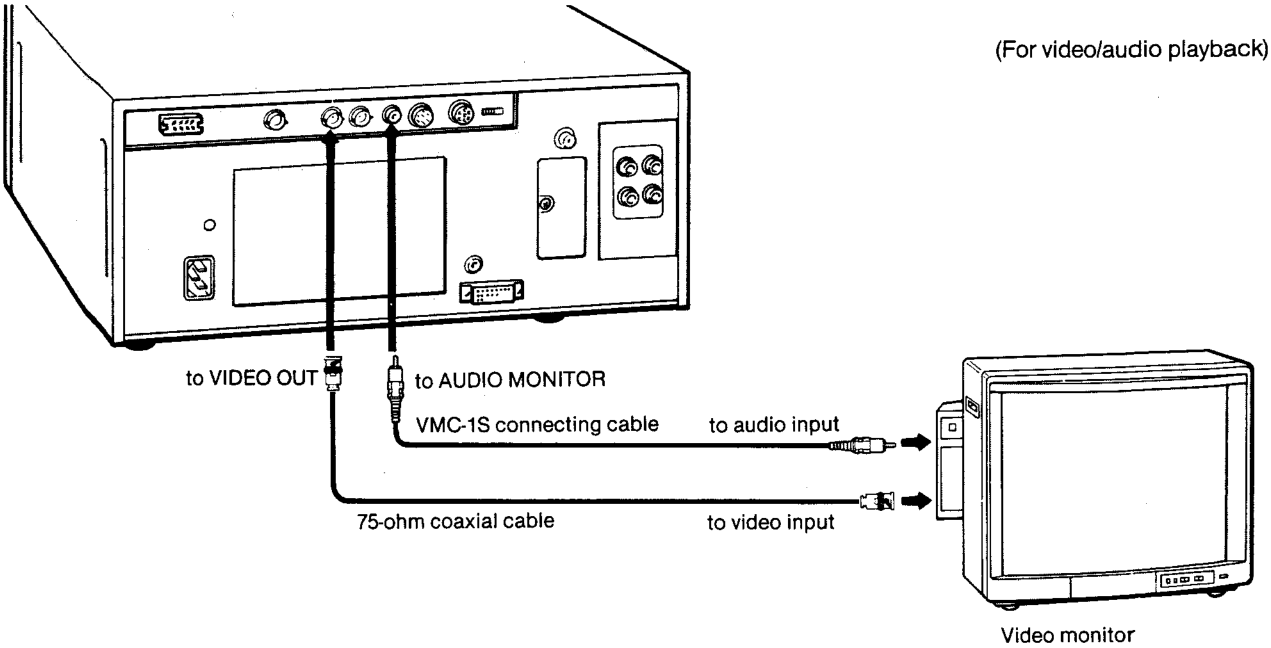
(For video/audio recording and playback)

Properly align the direction of the connectors. They can not be connected in the other direction.

To remove, press the buttons on both sides of the cable connector.

- Audio signal will be recorded on audio channel 2 only.

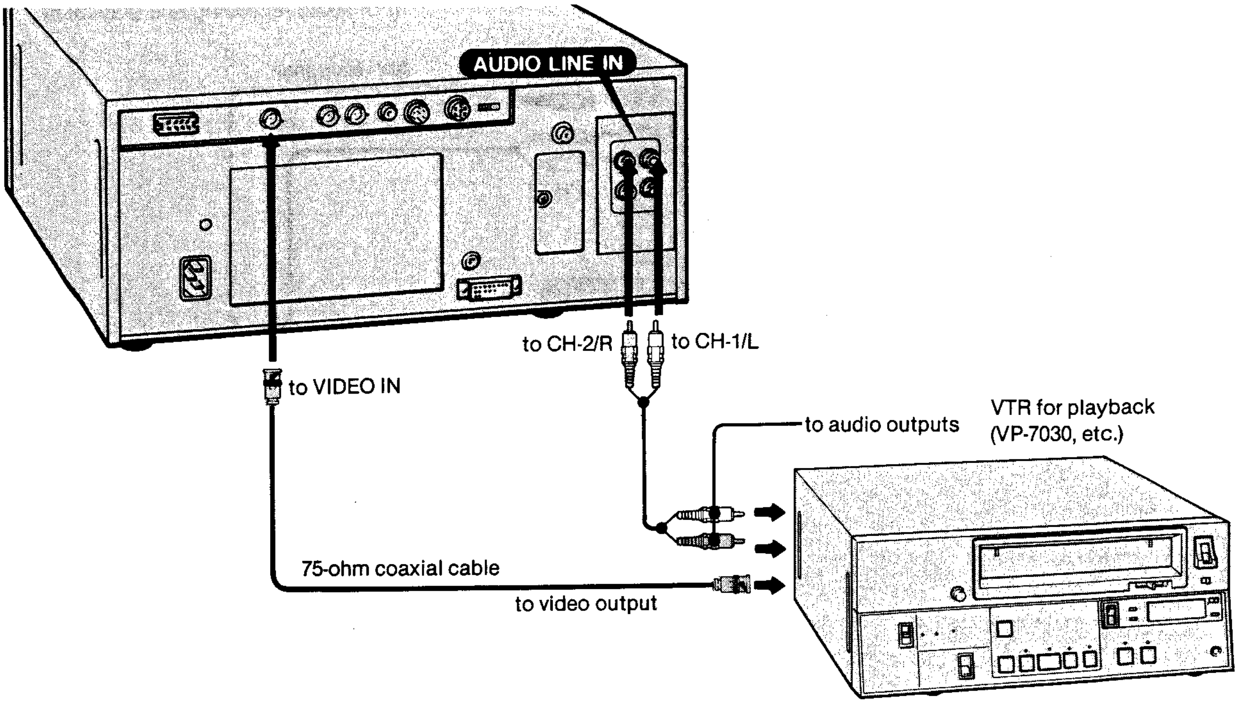
FOR CONNECTING A VIDEO MONITOR NOT HAVING AN 8-PIN VTR CONNECTOR


to VIDEO OUT
to AUDIO MONITOR
VMC-1S connecting cable
to audio input
75-ohm coaxial cable
to video input
Video monitor

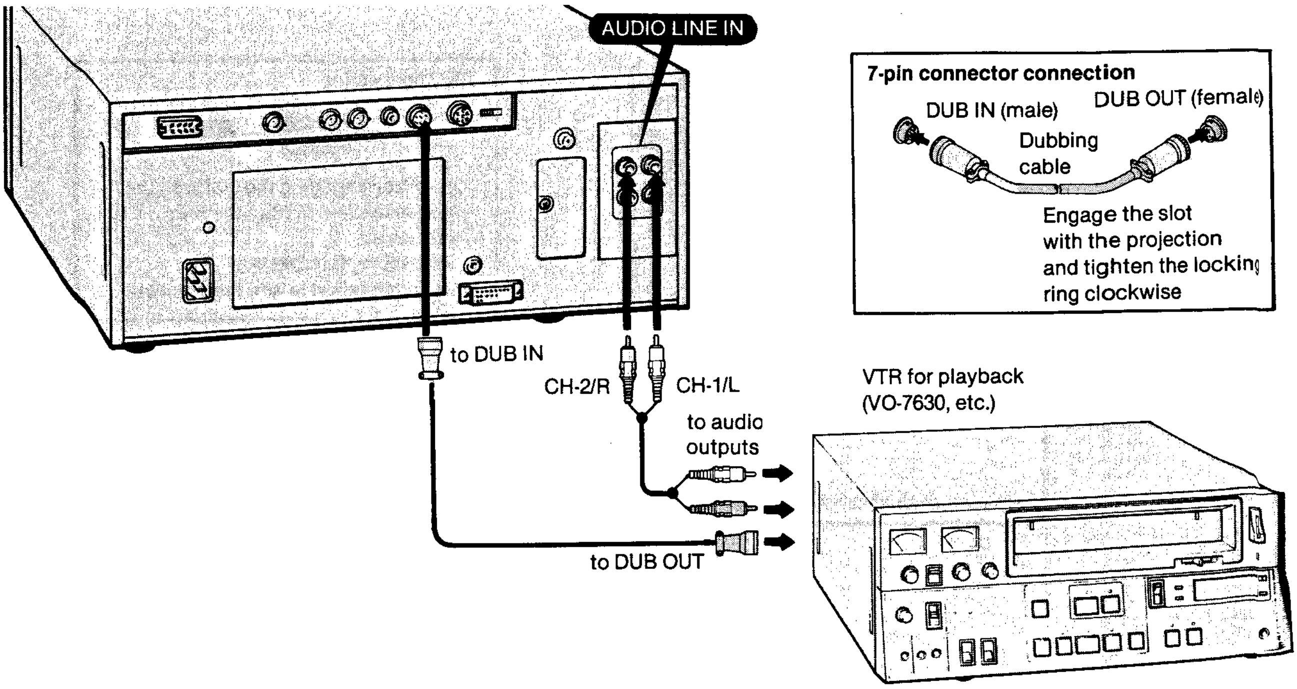
(For video/audio playback)

1-3-2. Connection to a VTR

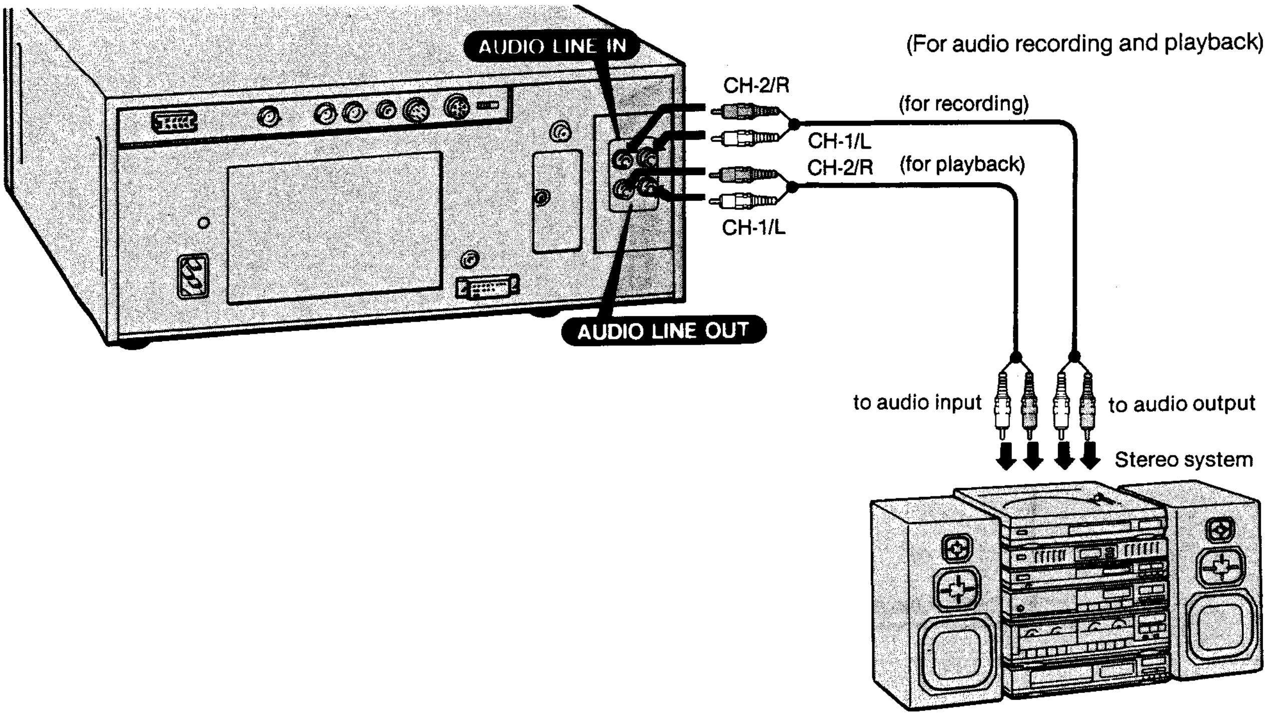
FOR TAPE DUBBING WHEN THE PLAYER HAS NOT THE DUB CONNECTOR


AUDIO LINE IN
to CH-2/R
to CH-1/L
to VIDEO IN
to audio outputs
VTR for playback
(VP-7030, etc.)
75-ohm coaxial cable
to video output

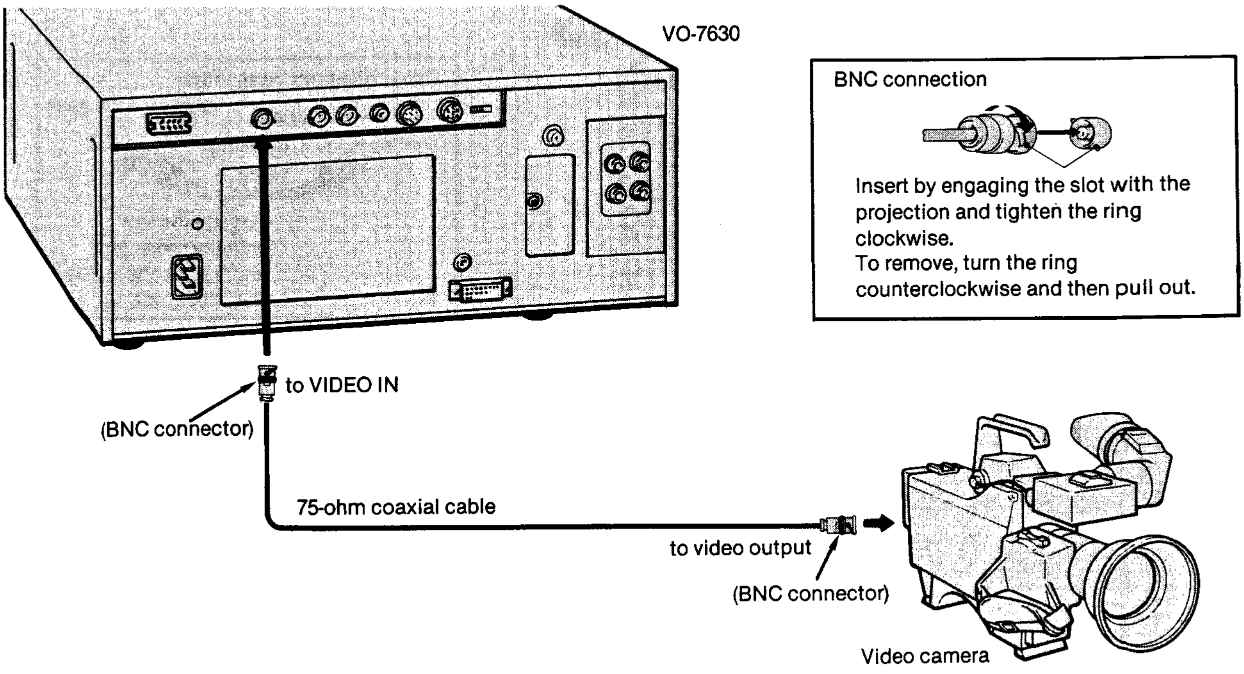
FOR TAPE DUBBING WHEN THE PLAYER HAS THE DUB CONNECTOR


AUDIO LINE IN
7-pin connector connection
DUB IN (male)
DUB OUT (female)
Dubbing
cable
Engage the slot
with the projection
and tighten the locking
ring clockwise
to DUB IN
CH-2/R
CH-1/L
to audio
outputs
VTR for playback
(VO-7630, etc.)
to DUB OUT

1-3-3. Connection to a Stereo System

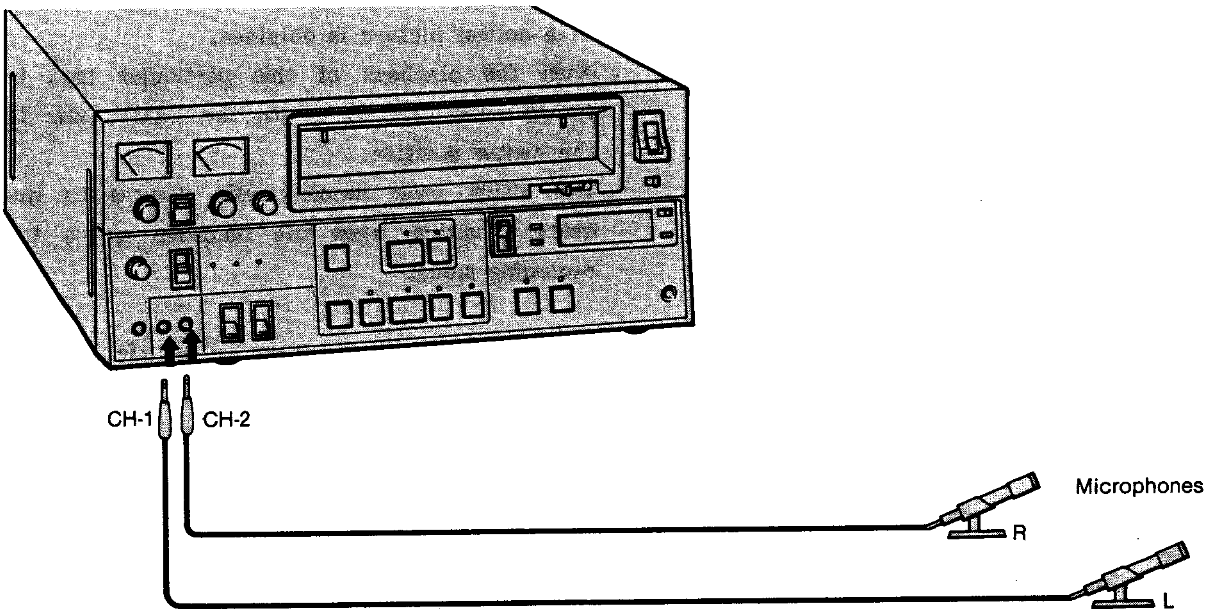

(For audio recording and playback)
AUDIO LINE IN
CH-2/R
(for recording)
CH-1/L
CH-2/R
(for playback)
CH-1/L
AUDIO LINE OUT
to audio input
to audio output
Stereo system

1-3-4. Connection to a Video Camera


VO-7630
BNC connection
to VIDEO IN
(BNC connector)
75-ohm coaxial cable
to video output
(BNC connector)
Video camera

Insert by engaging the slot with the projection and tighten the ring clockwise.
To remove, turn the ring counterclockwise and then pull out.

1-3-5. Connection to Microphones


CH-1
CH-2
Microphones
R
L

1-4. OPERATION

To stop the tape momentarily

Press the PAUSE button. To resume recording, press the PAUSE button again.

Long pause mode

If the pause mode continues for more than 8 minutes, the tape around the head drum automatically slackens to protect the video head and the tape. This is called "long pause mode". To release the long pause mode, press the PAUSE button.

When recording is finished

Press the STOP button.

If the recording is done to the end of a tape

The tape automatically rewinds to the beginning and stops.

Note on recording

Do not move the SKEW lever while recording.

If the tape does not run by pressing any of the function buttons

1 Press the EJECT button and take out the cassette.
2 Turn the reel to the direction of the arrow on the bottom of the cassette until the leader tape is completely taken up.
3 Insert the cassette again.

E-to-E (Electronics-to-Electronics) mode

An input video signal which has passed the amplifier in the recorder, is displayed on the monitor screen. This is the E-to-E mode picture, permitting the input signal to be checked on the monitor screen.

If a hooking distortion appears in the upper part of the picture

Move the SKEW lever slowly to the right or left until a normal picture is obtained.

- When the playback of this particular tape is finished, be sure to return the SKEW lever to the center position.
- The SKEW lever automatically returns to the center position when the recorder enters the recording mode.

In snow or streaks may appear on the picture

Slowly turn the TRACKING control clockwise or counterclockwise until the best possible picture is obtained.

- When the playback of this particular tape is finished, be sure to return the TRACKING control to the center FIXED position.

To stop the repeat playback

Press the STOP button.

Note on repeat playback

When the playback is so many times repeated, the portion played back may shift little by little unless the BKU-701 and a tape on which frame codes have been recorded are used.

When the programmed operation is finished,

Be sure to return the PROGRAMMED OPERATION switch to OFF.

To check the memorized points

1 Press the STOP button to stop the tape.
2 Set the PROGRAMMED OPERATION switch to A⟲B .
3 Press either the MARK IN A or B button.
The memory on that button will be displayed on the time counter.

To display the time between two particular points designated for a repeat playback

1 Stop the tape with the STOP button.

2 Set the PROGRAMMED OPERATION switch to ⟲.

3 Press the MARK IN A and B buttons simultaneously.

While the buttons are pressed, the time between the designated points will be displayed on the time counter.

Memory back up function

The last memories on the MARK IN A and B buttons and the last time counter display will be maintained due to the built-in Lithium battery even if the power is turned off. The battery provides approx. 3-year backup after the shipment. Should the memories be lost, the battery may have been exhausted.

To erase the memory

You can memorize only one point on each MARK IN A or B button. If the button is pressed several times, only the last point will be memorized.

When the RESET button is pressed with the PROGRAMMED OPERATION switch set at OFF or →|←, the memories are erased and the "00:00" point will be memorized on both buttons.

To locate a desired point

1 Set the PROGRAMMED OPERATION switch to OFF.

2 Play the tape and stop it at the desired point momentarily.

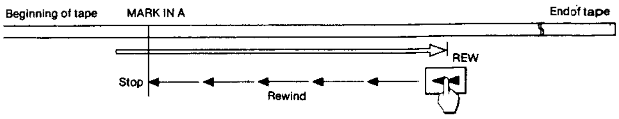
3 Press the MARK IN A button.

Resume the playback.

4 Set the PROGRAMMED OPERATION switch to →|←.

5 Press the REW button.

The tape will stop at the memorized point.



To repeat a desired portion

1 Set the PROGRAMMED OPERATION switch to OFF.

2 Play the tape and stop it momentarily at the point from which the playback is to be started.

3 Press the MARK IN A button.

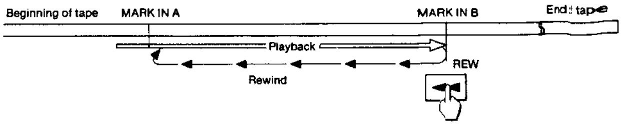
4 Search for a point where the playback is to be stopped and stop the tape momentarily at that point.

5 Press the MARK IN B button.

6 Set the PROGRAMMED OPERATION switch to ⟲.

7 Press the REW button.

The portion between the points memorized on the MARK IN A and B button is repeatedly played back.



To repeat between the beginning of a tape and a particular point

1 Set the PROGRAMMED OPERATION switch to OFF.

2 Search for a point where the playback is to be stopped and stop the tape momentarily at that point.

3 Press the MARK IN B button.

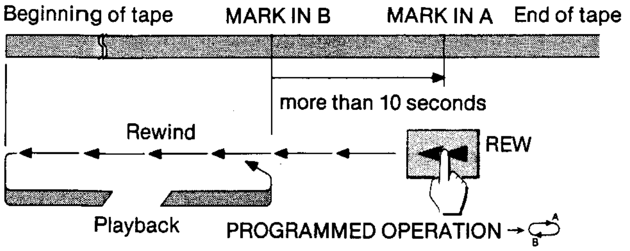
4 Press the PLAY button. After playing the tape for more than 10 seconds, stop the tape momentarily.

5 Press the MARK IN A button.

6 Press the REW button.

7 Set the PROGRAMMED OPERATION switch to 🔁 .

The tape rewinds to the beginning and the unit enters the playback mode. Then, the designated portion to the point memorized on the MARK IN B button is repeatedly played back.


Beginning of tape
MARK IN B
MARK IN A
End of tape
more than 10 seconds
Rewind
REW
Playback
PROGRAMMED OPERATION → 🔁

To repeat between a particular point and the end of the tape

1 Set the PROGRAMMED OPERATION switch to OFF.

2 Search for the point from which the playback is to begin and stop the tape momentarily at that point.

3 Press the MARK IN A button.

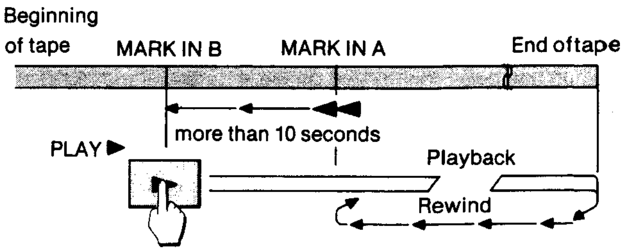
4 Press the REW button to rewind the tape for more than 10 seconds then stop the tape momentarily.

5 Press the MARK IN B button.

6 Set the PROGRAMMED OPERATION switch to 🔁 .

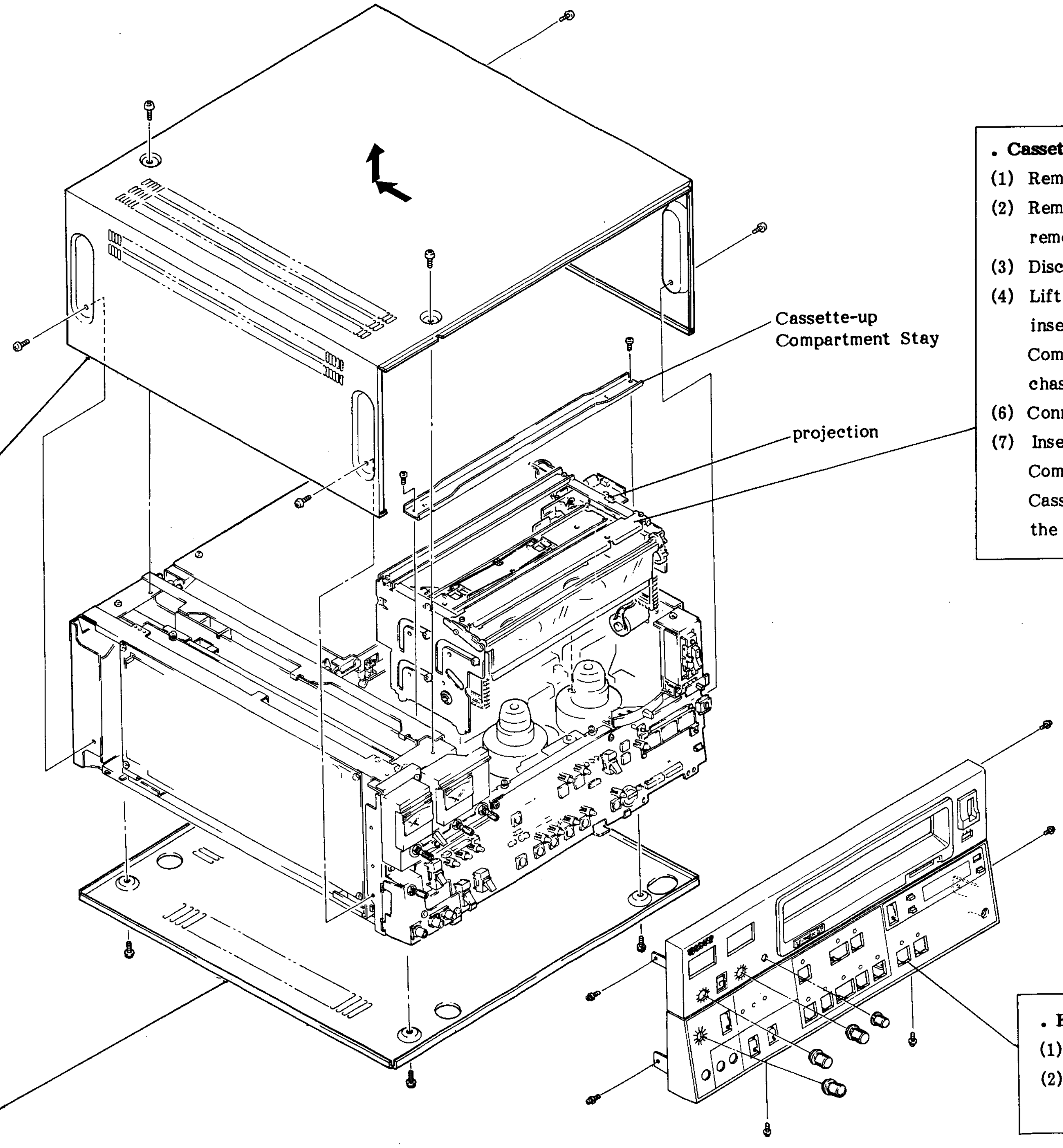
The tape is played back to the end and rewinds to the point memorized on the MARK IN A button, and the playback of the portion from that point to the end of the tape is repeated.

7 Press the PLAY button.


Beginning of tape
MARK IN B
MARK IN A
End of tape
more than 10 seconds
PLAY ▶
Playback
Rewind

SECTION 2
SERVICE INFORMATION

2-1. REMOVAL OF CABINET



. Upper Case

Remove the six fixing screws shown in the figure. Then remove the Upper Case from the unit in the direction of the arrow.

. Lower Case

Remove the four fixing screws. Then remove the Lower Case from the unit.

. Cassette-up Compartment

(1) Remove the Upper Case.
(2) Remove the two fixing screws and then remove the Cassette-up Compartment Stay.
(3) Disconnect CN1 on the CC-31 board.
(4) Lift the Cassette-up Compartment Block, insert the projections of the Cassette-up Compartment Block into the holes of the chassis.
(6) Connect CN1 on the CC-31 board.
(7) Insert the projections of the Cassette-up Compartment Block into the holes of the Cassette-up Compartment Stay (as shown in the figure) and then fix the screws.

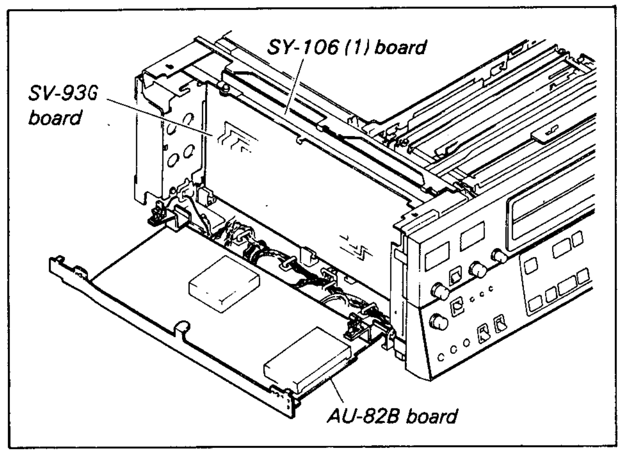
. Front Panel

(1) Remove the Upper Case.
(2) Remove the six fixing screws (two screws each on the left and right sides and the bottom).

2-2. HOW TO SERVICE THE PRINTED CIRCUIT BOARD

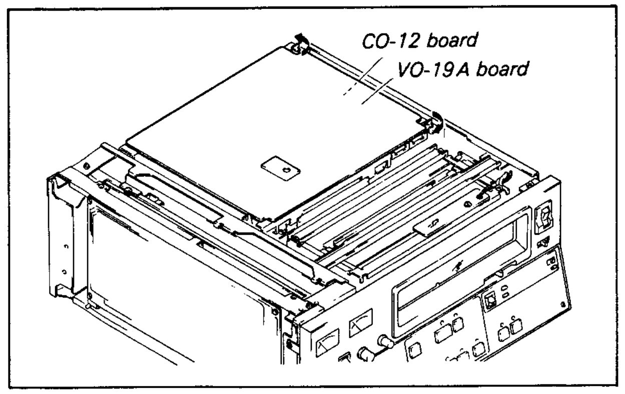
2-2-1. AU-82B, SV-93G and SY-106(1) Boards

Open the AU-82B board to repair as shown in the figure.


SY-106 (1) board
SV-93G board
AU-82B board

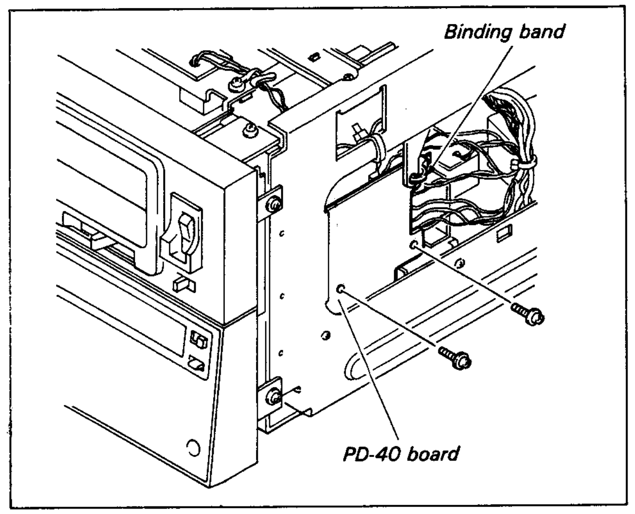
2-2-2. VO-19A Board

Turning the fastener to the direction of the arrow, the VO-19A board can be opened. Then, the component side of the VO-19A board can be repaired.


CO-12 board
VO-19A board

2-2-3. PD-40 Board

Cut a binding band and remove two screws, and then remove the PD-40 board.

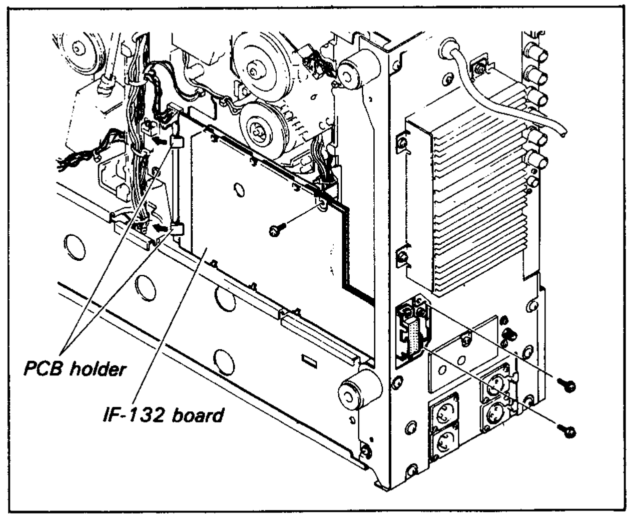

Binding band
PD-40 board

2-2-4. IF-132 Board

(1) Open the PCB holder in the direction of the arrow, and then open the IF-132 board.

(2) Remove a screw.

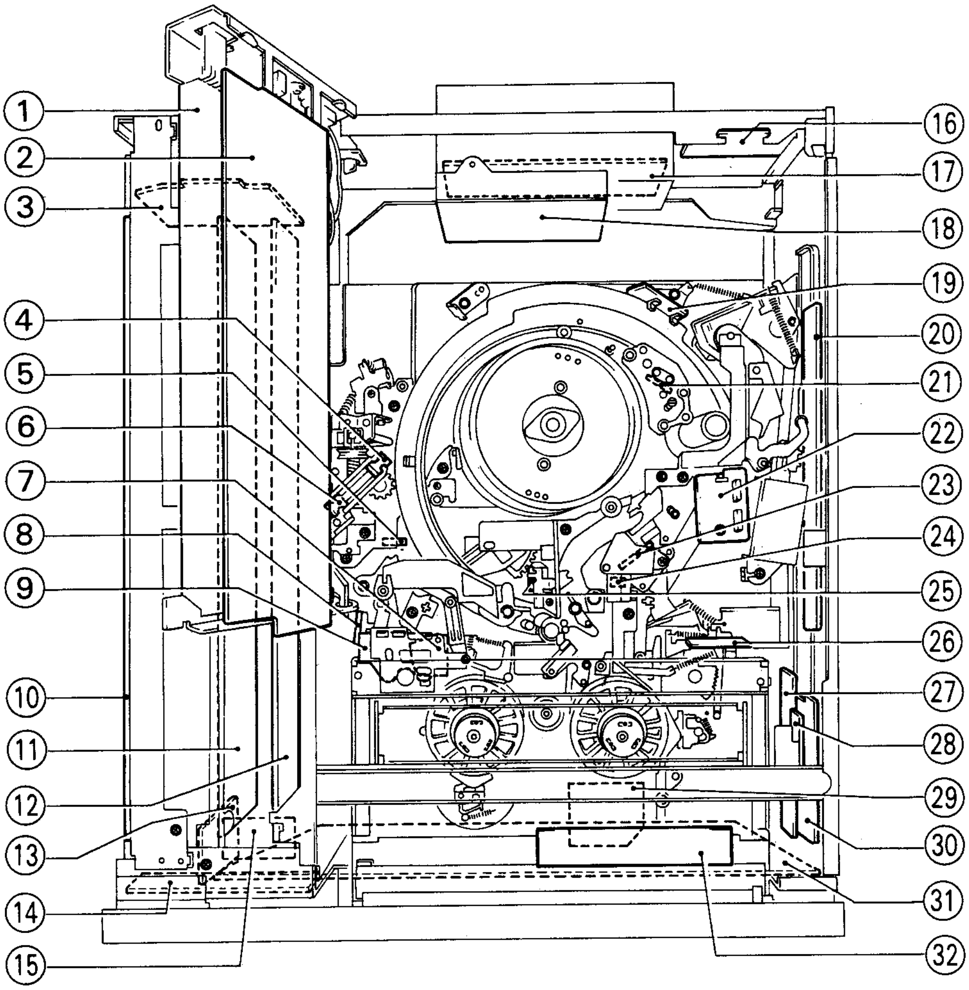
(3) Remove the two screws which install RX DATA terminal and REMOTE terminal.


PCB holder
IF-132 board

2-3. MAIN PARTS LOCATION

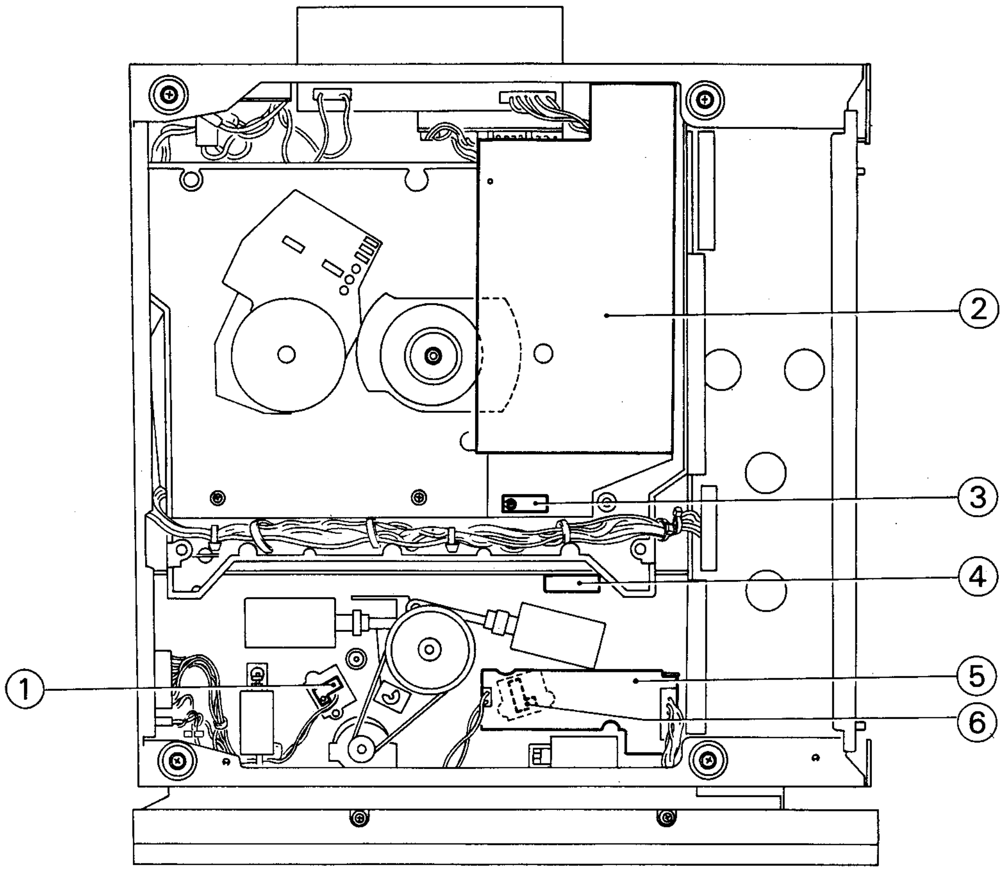
2-3-1. Location of the Printed Circuit Board

[TOP VIEW]



1	VO-19A Board
2	CO-12 Board
3	CP-128 Board
4	PH-5 Board
5	LM-13 Board
6	PH-5 Board
7	SE-46 Board
8	PTC-34 Board
9	PTC-30 Board
10	AU-82B Board
11	SV-93G Board
12	SY-106(1) Board
13	HP-30 Board
14	MT-29 Board
15	MC-28 Board
16	AC-65 Board(UC) AC-89 Board(EK)
17	UR-14 Board(UC) UR-14E Board(EK)
18	DC-31 Board(UC) DC-31A Board(EK)
19	PTC-33 Board
20	RP-36A Board
21	DUS-92 Board
22	DUS-147 Board
23	EC-28 Board
24	PH-5 Board
25	PH-5 Board
26	CC-33 Board
27	CC-32 Board
28	CC-31 Board
29	RM-39 Board
30	PD-40 Board
31	KY-105G Board
32	LP-41 Board

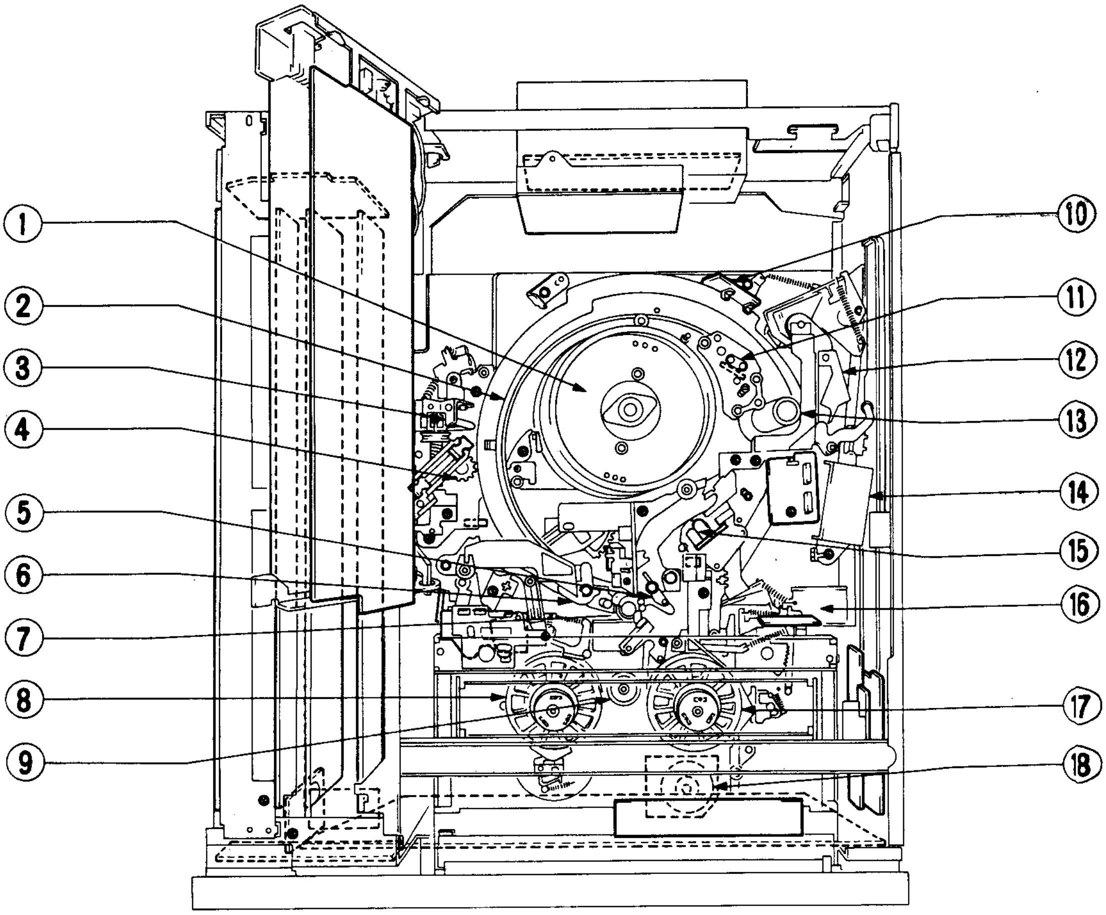
BOTTOM VIEW]



1 PTC-35 Board
2 IF-132 Board
3 PT-9 Board
4 TG-22 Board
5 PD-41 Board
6 PTC-35 Board

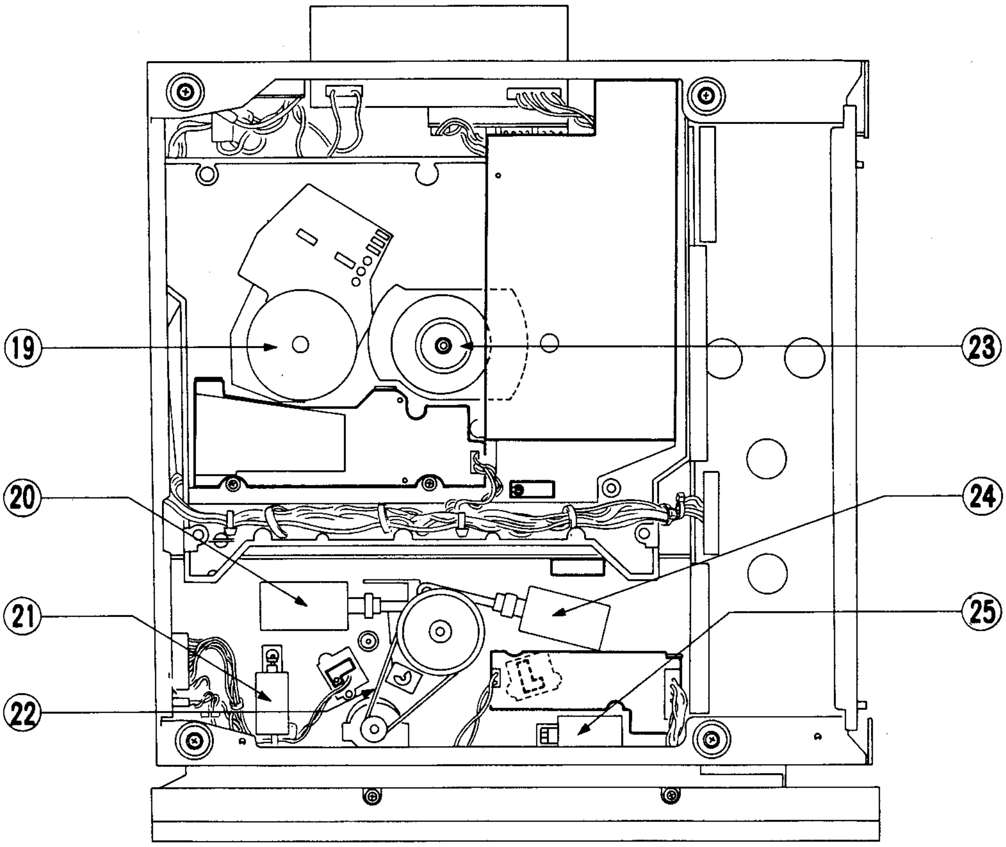
2-3-2. Location of the Mechanical Main Parts/ Components

[TOP VIEW]



1 Head Drum	10 FR Detector
2 Threading Ring	11 Audio/CTL Head
3 T Correction Guide	12 Pinch Lever
4 Gear Box	13 Capstan Shaft
5 S Drawer Arm	14 Pinch Solenoid
6 T Drawer Arm	15 CTL PB Head
7 Pinch Roller	16 Search Solenoid
8 Take-up Reel Table	17 Supply Reel Table
9 FF/REW Idler	18 Reel Motor

[BOTTOM VIEW]



19 Capstan Motor
20 Supply Idler Solenoid
21 Supply Brake Solenoid
22 Belt for FF/REW Idler
23 Drum Motor
24 Take-up Idler Solenoid
25 Take-up Brake Solenoid

2-4. PRINTED CIRCUIT BOARD

Circuit information is provided below.

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	RP-36A	PB Amplifier
	VO-19A	Y REC/PB (Y/C Separator)
	CO-12	Color REC/PB
AUDIO	AU-82B	PB Amplifier
	AU-89	Dolby
	CP-128	Output Amplifier
	DUS-92	Audio CTL Head
	DUS-147	Audio CTL Head
	HP-30	Headphones
	MC-28	MIC In
	MT-29	Audio Level Meter
SERVO	EC-28	CTL Head
	DUS-92	Audio CTL Head
	DUS-147	Audio CTL Head
	PT-9	Reel Motor Driver
	SV-93G	Servo System
POWER	AC-65	AC Input (UC)
	AC-89	AC Input (EK)
	DC-31	DC Supply (UC)
	DC-31A	DC Supply (EK)
	UR-14	Switching Regulator (UC)
	UR-14E	Switching Regulator (EK)
KEY	KY-105G	Function Key/Display
SYSTEM CONTROL	IF-132	33P Interface
	PD-40	Plunger Solenoids
	PD-41	Plunger Solenoids
	PH-5	Tape Beginning/End Sensor
	SY-106(1)	System Control
OTHERS	CC-31	Cassette Compartment Driver
	CC-32	Cassette In Detector
	CC-33	Cassette Down Detector
	LM-13	Threading Motor
	LP-41	Cassette Compartment Light
	PTC-30	SP, Miss REC. KCA Detector
	PTC-33	FR Stop Detector
	PTC-34	Unthreadend Detector
	PTC-35	S/T Reel Rotation Detector
OTHERS	RM-39	Reel Motor
	SE-46	Tension Regulator Detector
	TG-22	Tension Regulator LED

2-5. CONNECTORS

When external cables are connected to the various connectors on the connector panel during maintenance, the hardware listed below (or equivalents) must be used.

Panel Indication	**Connector**
TV	1-506-161-00 CONNECTOR, 8P, MALE
VIDEO IN VIDEO OUT 1,2	1-560-069-11 PLUG, BNC, MALE
AUDIO MONITOR AUDIO LINE IN CH-1, CH-2 AUDIO LINE OUT CH-1, CH-2	1-506-311-00 PLUG, PIN
RF OUT	1-508-459-00 CONNECTOR, AERIAL
DUB IN	1-561-055-00 PLUG, 7P, FEMALE
DUB OUT	1-508-948-00 PLUG, 7P, MALE

2-6. OUTPUT SIGNAL OF THE CONNECTOR

VIDEO OUT 1, 2 : 1.0 ± 0.2 Vp-p, 75 ohms, unbalanced, sync negative

AUDIO LINE OUT CH-1/L, CH-2/R : +4 dB (600-ohm load), balanced

AUDIO MONITOR : -5 dB (47-kohm load)

2-7. SPARE PARTS

(1)

> The shaded and ⚠ -marked components are critical to safety.
> Replace only with the same components as specified.

(2) Replacement parts supplied from the Sony Parts Center will sometimes have a different shape and outside view from the parts which are used in the unit. This is due to "accommodating improved parts and/or engineering changes" or "standardization of genuine parts".

- This manual's exploded views and electrical spare parts lists indicate the part numbers of "the present standardized genuine parts".
- Regarding engineering part changes by our engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with "s" in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with "o" in the SP column are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

2-8. SELECT SWITCH SETTING

Along with the select switches on the control panel and the connector panel, the switch listed below is on the SY-106 board. This switch must be set according to operating conditions.

. SY-106 Board
SW1: SELF DIAGNOSTIC Switch
ON: SELF DIAGNOSTIC mode
OFF: NORMAL mode
When the unit is shipped, this switch is set to the OFF position.

2-9. HOW TO OPERATE THE MACHINE WITHOUT INSTALLING A CASSETTE TAPE

(1) Remove the Cassette-up Compartment. (Refer to Section 2-1.)
(The Tape Beginning Sensor and Tape End Sensor are disabled according to disconnect the connector of Cassette-up Compartment.)

(2) Turn the power ON. (The machine enters the FR-STOP mode automatically.)

(3) The machine can be placed into the desired mode by pressing the function button corresponding to the mode.

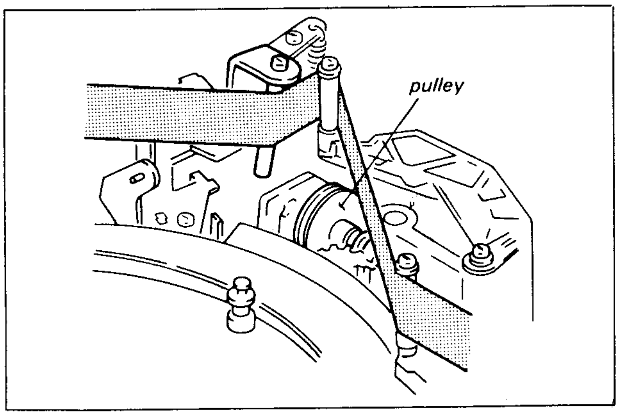
2-10. CASSETTE REMOVAL PROCEDURE WHEN NORMAL EJECTION IS NOT POSSIBLE

If the EJECT operation becomes impossible due to trouble or the Cassette-up Compartment does not rise when the EJECT operation takes place, the cassette tape can be removed from the set by following the procedures described below.

(1) Turn the power OFF.

(2) Remove the Upper Case. (Refer to Section 2-1.)

(3) Turn the white pulley of the Gear Box by hand in a clockwise direction looking from the front panel side until the Threading Ring is in the FR-STOP position (until the S Drawer Arm is located at the front of CTL head). (At this time, the Threading Ring moves in the unthreading direction. But the tape remains at the position of threading completion.)

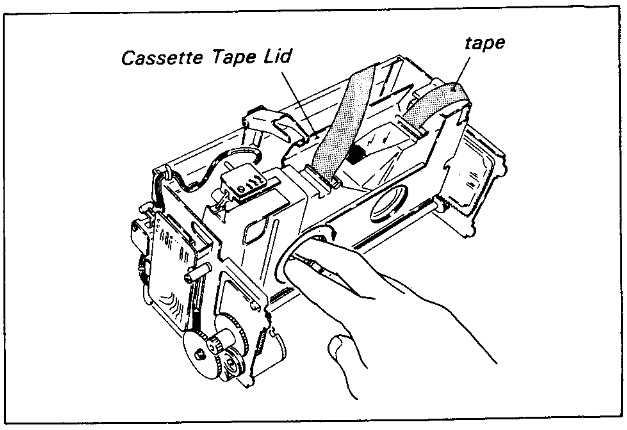


(4) Disconnect the connector CN1 on the CC-31 board of the Cassette-up Compartment.

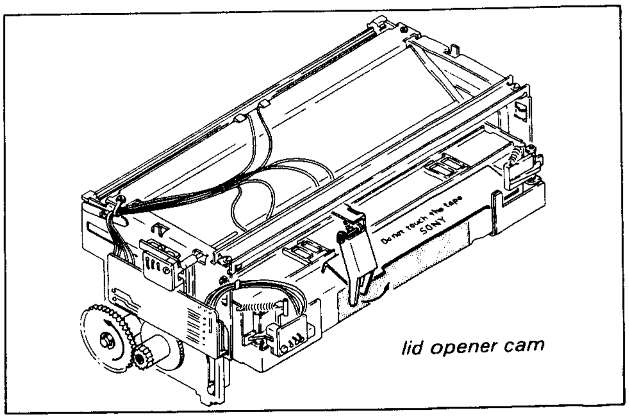
(5) Remove the Cassette-up Compartment Stay. (Refer to Section 2-1.)

(6) Slowly lift the Cassette-up Compartment with the cassette tape in it. Remove the tape remaining in the set carefully so that it is not damaged.

(7) Hold the Cassette Tape Lid so that it does not close. Wind the tape into the cassette by turning the reel hub on the back of the cassette by hand.



(8) Raise the cam for opening the lid and close the cassette lid.



(9) Remove the tape from the Cassette-up Compartment.

(10) Turn the gear on the right side of the Cassette-up Compartment by hand in a counterclockwise direction in order to place the Cassette-up Compartment into the up state.

(11) Locate the cause of the trouble and remedy the problem.

2-11. DIAGNOSTIC FUNCTION IN SYSTEM CONTROLLER

2-11-1. Outline of Self Diagnosis

The VO-7630 has a self diagnostic function for the system control circuit which determines if the source of the problem is in the microcomputer itself or not.

The system control function is classified into mechanical and electrical operation controls. Mechanical operation control defects are efficiently analyzed using the self diagnostic function.

The VO-7630 employs six one-chip microcomputers. M1 and M2 which include the respective memories and I/O ports, are used for the master controls. M3 is for controlling the capstan motor, M4 is for controlling the display, M5 is for decoding the remote control signal and M6 is used for 33-pin interface.

2-11-2. Diagnosis Method

When SW1 on the SY-106 board is set to the ON position, the self diagnostic function is activated. For the diagnostic result display, the input and output data of the microcomputer's I/O port is displayed four bits at a time for each test address, as shown on pages 2-14 through 2-17.

When the RESET button is pressed, the test address is displayed. When the MARK IN A button is pressed while the RESET button is pressed, the LSB of the test address is changed as shown below.

→ 0 → 1 → 2 → ··· → 9 → L → H → P → R → -(minus) → (blank) ─┐ (returns to 0)

When the MARK IN B button is pressed while the RESET button is pressed, the MSB of the test address is changed as shown below.

→ 0 → 1 → 2 ─┐ (returns to 0)

Twenty-six test addresses are available in hexadecimal notation. Therefore, when the RESET, MARK IN A and MARK IN B buttons are pressed, any test address data (digits 1 through 4) shown in the table on pages 2-14 through 2-17 can be displayed on the front panel LEDs. On the LED display, the logic "H" is displayed "1", and the logic "L" is "0". This logic value is changed depending on the VTR operating condition.

Therefore, the H:DRUM STOP signal at test address "01" can be observed by the following procedure.

(Operation)	(LED display) CTL display	(Remarks)
SW1/SY-106 board — ON	1100	DIAGNOSTICS MODE
Press the RESET button	↓ 00	TEST ADDRESS = 00
Press the MARK IN A button once while pressing the RESET button	↓ 01	TEST ADDRESS = 01
Release the RESET button	↓ 1111 ↑ H:DRUM STOP signal	Data for 01

If the drum is stopped at this time, the MSB displays "1" ("H"). When the cassette tape is inserted into the VTR and the VTR is put into the PLAY mode, the display "1" is changed to "0" (which indicates the rotation command).

The input and output signals of the microcomputer in each mode are shown in the timing chart on pages 2-19 through 2-36. If an input signal is properly sent to the microcomputer in each mode, the microcomputer sends an output signal shown in the timing chart.

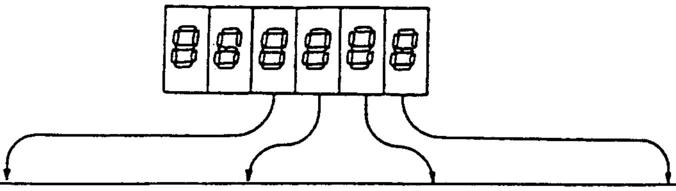
2-11-3. Troubleshooting

The troubleshooting with the self diagnostic function is described below.

The mode conversion diagram of the mechanical operation is shown on page 2-18. Referring to this diagram, check where the present trouble occurs during mode conversion, or where malfunctions are found during mechanism (e.g., motor or solenoid) operation. When the mode in which the trouble occurs is detected, refer to the timing chart described in the mode conversion diagram. The timing chart shows the input and output signals of the microcomputer in each mode. Therefore, when the motor or solenoid is abnormal, observe the output signal line using an LED to check whether it is changed as shown in the timing chart. When the output signal from the microcomputer is normal, check the output signal of the next microcomputer. This process is continued. If the signal line is not changed as shown in the timing chart, refer to the schematic diagram for the trouble location. The timing chart lists an input/output signal name, signal display test address and digit, and the microcomputer pin name through which a signal is input and output.

For example, the H:DRUM STOP signal is "01-DIGIT 1" and is displayed in the MSB (digit 1) when the test address is "01". Whether the input and output signals are changed as shown in the timing chart is checked with the actual VTR operation.

2-11-4. Diagnosis List



TEST ADDRESS	DISPLAYED DATA				INPUT/OUTPUT PORT NAME ON THE MICRO PROCESSOR	
	DIGIT 1	DIGIT 2	DIGIT 3	DIGIT 4		
00	CAPSTAN CMD FWD/$\overline{\text{REW}}$ (1=FWD CMD 0=REV CMD	DRUM NORMAL/$\overline{\text{SEARCH}}$ (1=NORMAL 0=SEARCH MODE	AUTO CH-2 PB/EE (1=EE 0=PB	AUTO CH-1 PB/EE (1=EE 0=PB	E1	OUT/IC7 on SY
01	H:DRUM STOP CMD (1=DRUM STOP 0=DRUM ROTATE	VIDEO PB/$\overline{\text{EE}}$ (1=PB 0=EE	L:AUDIO CH-2 REC 0=CH-2 REC	L:AUDIO CH-1 REC 0=CH-1 REC	E2	OUT/IC7 on SY
02	CTL COUNT UP/$\overline{\text{DOWN}}$ (1=COUNT UP 0=COUNT DOWN	L:SKEW SOL.ON (1=OFF 0=ON	L:VIDEO CH-B REC 0=CH-B REC	L:VIDEO CH-A REC 0=CH-A REC	E3	OUT/IC7 on SY
03	H:REEL REV 1=SEARCH REV MODE	H:REEL FWD 1=PLAY.REC.orSEARCH FWD MODE	H:REEL STILL 1=PLAY(REC)PAUSE or SEARCH PAUSE	H:REEL STOP 1=STOP MODE	P	OUT/IC7 on SY
04	H:REEL FF/REW (1=FF or REW MODE 0=other mode	L:SEARCH SOL.ON (1=OFF 0=ON	L:PINCH SOL.ON (1=OFF 0=ON	1	0	OUT/IC7 on SY
05	L:T-BRAKE SOL.ON (1=OFF 0=ON	L:S-BRAKE SOL.ON (1=OFF 0=ON	L:T-IDLER SOL.ON (1=OFF 0=ON	L:S-IDLER SOL.ON (1=OFF 0=ON	E0	OUT/IC7 on SY
06	SEARCH SPEED DATA (NOTE 1)				R2	OUT/IC7 on SY
07	L:CASSETTE COMPARTMENT UP CMD 0=UP	L:CASSETTE COMPARTMENT DOWN CMD 0=UP DOWN	L:THREAD MOTOR ON 0=THREAD	L:UNTHREAD MOTOR ON 0=UNTHREAD	R3	OUT/IC7 on SY
08	L:SERVO LOCK (1=UNLOCK 0=LOCK	L : FR-UNTHREAD POSITION	H:CASSETTE DOWN 1=DOWN (NOTE 2)	H:CASSETTE IN 1=INSERTED	K	IN/IC7 on SY
09	H:DRUM STOP (1=STOP 0=ROTATE	L : REEL STOP (1=STOP 0=ROTATE	H:T-IDLER ON (1=ON 0=OFF	H:T-REEL STOP (1=STOP 0=ROTATE		
0L	L:CAPSTAN STOP (1=ROTATE 0=STOP	CAPSTAN $\overline{\text{FWD/REV}}$ (1=FWD 0=REV	UNTHREAD END (NOTE 3)	THREAD END	R1	IN/IC7 on SY
0H	0	0	PAUSE SELECT-1 (NOTE 4)	PAUSE SELECT-0	E4	IN/IC7 on SY
0P	L:DRUM ROTATE (1=STOP 0=ROTATE	L:CASSETTE CONNECT 0=COMPARTMENT IS CONNECTED	L:SLACK DET:OFF (NOTE 5)	0	E5	IN/IC7 on SY
0R	RING SLACK ERROR MESSAGE (NOTE 6) The condition of VTR is detected by IC7/SY board when the ring slack occurs. The RING SLACK means that the threading ring isn't rotating.					
0-	0	0	0	0		
0(Blank)	0	0	0	0		

10	H:FF KEY ON 1=ON 0=OFF	H:PLAY KEY ON 1=ON 0=OFF	H:REW KEY ON 1=ON 0=OFF	H:STOP KEY ON 1=ON 0=OFF
11	H:DUB KEY ON 1=ON 0=OFF	H:REC KEY ON 1=ON 0=OFF	0	H:PAUSE KEY ON 1=ON 0=OFF
12	0	0	0	H:EJECT KEY ON 1=ON 0=OFF
13	H:SERCH CMD 1=SERCH 0=NORMAL	FWD/$\overline{\text{REV}}$ CMD 1=FWD 0=REV	0	0
14	H:TIMER PLAY SW ON 1=ON 0=OFF	H:TIMER REC SW ON 1=ON 0=OFF	H:TIMER PLAY STATUS 1=TIMER PLAY 0=OTHER MODE	H:TIMER REC STATUS 1=TIMER REC 0=OTHER MODE
15	CTL/FC SW 1=CTL 0=FC	0	0	0
16	L:MISS-REC SW 1=REC EN 0=REC DIS	EIA/$\overline{\text{CCIR}}$ 1=EIA 0=CCIR	L:DEW DET 1=NOT DETECTED 0=DETECTED	H:PROGRAM REW SW 1=ON 0=OFF
17	H:KEY REQUEST 1=ANY KEY IS TURNED ON	H:REQUEST CMD 1=GOES INTO ANY MODE DURING PROGRAM OPERATION	RECORDER/$\overline{\text{PLAYER}}$ 1=RECORDER 0=PLAYER	H:PROGRAM REPEAT SW 1=ON 0=OFF
18	SEARCH SPEED DATA (NOTE 1)			
19	1	1	1	1
1L	1	1	1	1
1H	1	L:RM-690 INHIBIT 1=ENABLED 0=INHIBITED	L:NO CTL 1=NORMAL 0=NO CTL IN PLAY MODE	0
1P	H:REW LED 1=ON 0=OFF	0	0	0
1R	H:REC LED 1=ON 0=OFF	H:PAUSE LED 1=ON 0=OFF	H:PLAY LED 1=ON 0=OFF	H:FF LED 1=ON 0=OFF
1-	H:STD-BY LED 1=ON 0=OFF	H:REV SEARCH LED 1=ON 0=OFF	H:FWD SEARCH LED 1=ON 0=OFF	H:DUB LED 1=ON 0=OFF
1(Blank)	H:FC LED 1=ON 0=OFF	H:KEY INHIBIT 1=SW ON BKU-701 INHIBITS FRONT KEYS	H:HOURS METER ON 1=METER ON 0=METER OFF	H:BKU CONNECTED 1=CONNECTED 0=NOT CONNECTED

20	**REEL SLACK ERROR MESSAGE (NOTE 7)** The condition of VTR is detected by IC12/SY board when the reel slack occurs. The REEL SLACK means that the reel motor is not rotating.			
21	0	0	0	0
22	0	0	0	0
23	L:UNTHREAD 1=OTHER MODE 0=UNTHREAD MODE	L:RX-DATA REC 1=OTHER MODE 0=RX-DATA REC MODE	L:VIDEO MUTE 1=VIDEO is OUTPUT 0=VIDEO is MUTED	H:AUDIO MUTE 1=AUDIO is MUTE 0=AUDIO is OUTPUT
24	1	0	1	0
25	0	0	0	0
26	0	0	0	0

NOTE 1 SEARCH SPEED DATA

DATA DISPLAYED	TAPE SPEED
0 0 0 0	NOISELESS STILL
0 0 0 1	×1/30
0 0 1 0	×1/10
0 0 1 1	×1/5
0 1 0 0	×1/2
0 1 0 1	×1
0 1 1 0	×2
0 1 1 1	×5
1 0 0 0	×8
1 0 0 1	STILL

NOTE 2 CASSETTE POSITION

CASSETTE DOWN	CASSETTE IN	CASSETTE POSITION
0	0	DURING CASSETTE-IN
0	1	DURING CASSETTE-DOWN
1	0	CASSETTE-UP COMPLETION
1	1	CASSETTE-DOWN COMPLETION

NOTE 3 THREAD END/UNTHREAD END

UNTHREAD END	THREAD END	THREADING RING POSITION
1	1	Between CASSETTE-IN and FR-STOP
0	1	THREAD END position
0	0	Between FR-STOP and THREAD END
1	0	FR-STOP position

NOTE 4 PAUSE SELECT-1/PAUSE SELECT-0

PAUSE SELECT-1	PAUSE SELECT-0	PAUSE TIMER
0	1	8 min
1	1	1 min
1	0	10 sec
0	0	2 sec

NOTE 5 SLACK DETECT
When shorting between TP 3 and GND(E1) on The SY board, SLACK Detector does not operate.
Normal state is "H".

NOTE 6 RING SLACK ERROR MESSAGE(This item shows that the mode when the RING SLACK occurs.)

DATA DISPLAYED	CONDITION
0 0 0 0	RING SLACK is not occurring.
0 0 0 1	CASSETTE DOWN →FR-STOP
0 0 1 0	FR-STOP →THREAD END
0 1 0 0	FR-STOP →CASSETTE DOWN
0 1 0 1	DURING CASSETTE IN

NOTE 7 REEL SLACK ERROR MESSAGE(This item shows that the mode when the RING SLACK occurs.)

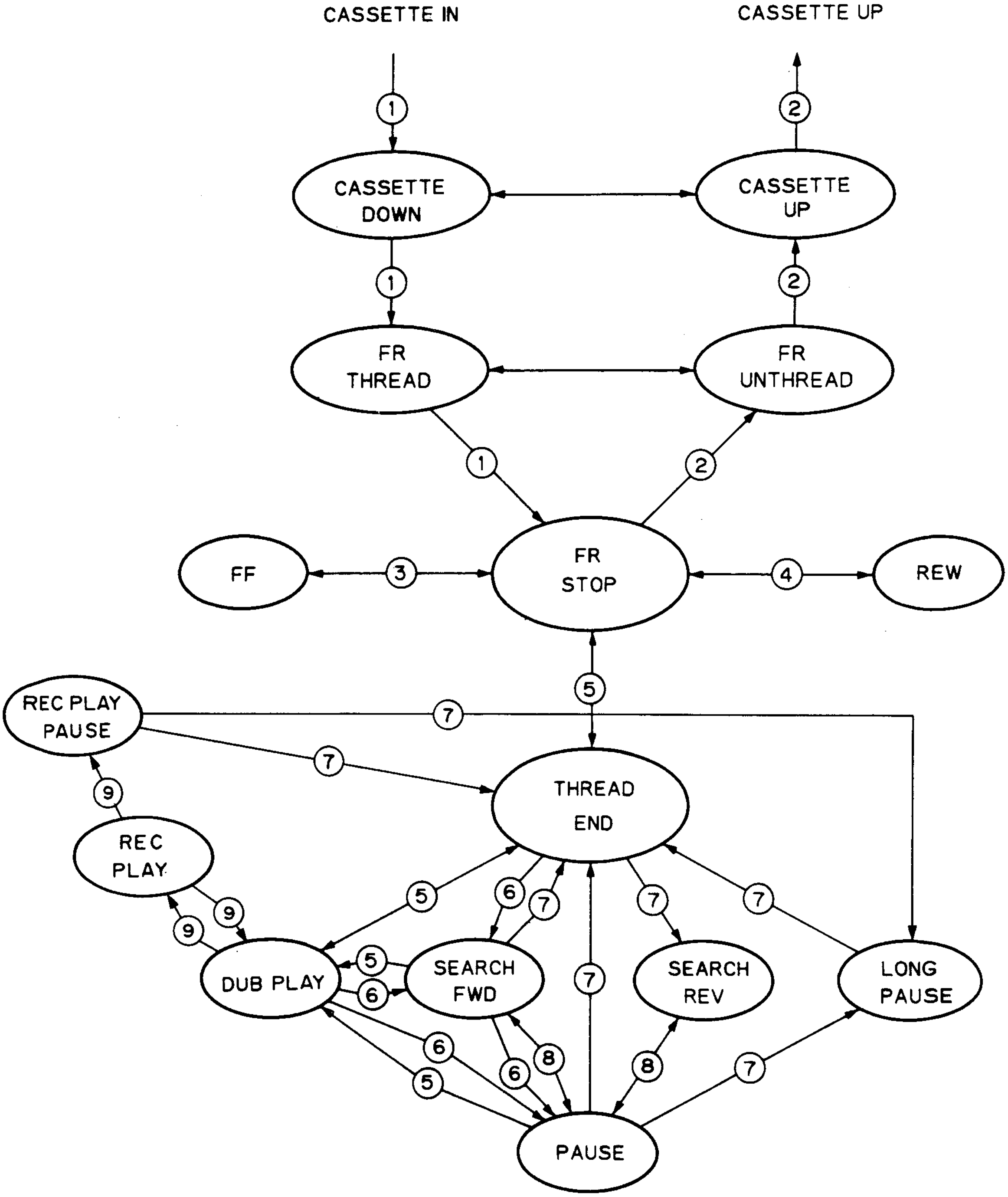
DATA DISPLAY				CONDITION
0	0	0	0	REEL SLACK DOES NOT OCCUR
0	1	1	0	FF or REW MODE
0	1	1	1	FR-STOP →FR UNTHREAD
1	0	0	0	THEND → FR-STOP
1	0	0	1	×5 or ×8 SPEED MODE
1	0	1	0	×1 or ×2 SPEED MODE
1	0	1	1	×1/2 SPEED MODE
1	1	0	0	×1/5 SPEED MODE
1	1	0	1	×1/10 SPEED MODE
1	1	1	0	×1/30 SPEED MODE

Selecting the Long Pause Timer

TYPE 7 and 9 Series can be select four pattern as the following setting. (The former models can be only one select, 8 min.)
It is can be controlled by TP5 (Address E-6) and JW144 (Address G-2).

JW144	TP5	PAUSE TIMER
SHORT	OPEN	8 min.
SHORT	GND SHORT	2 sec.
OPEN	OPEN	1 min.
OPEN	GND SHORT	10 sec.

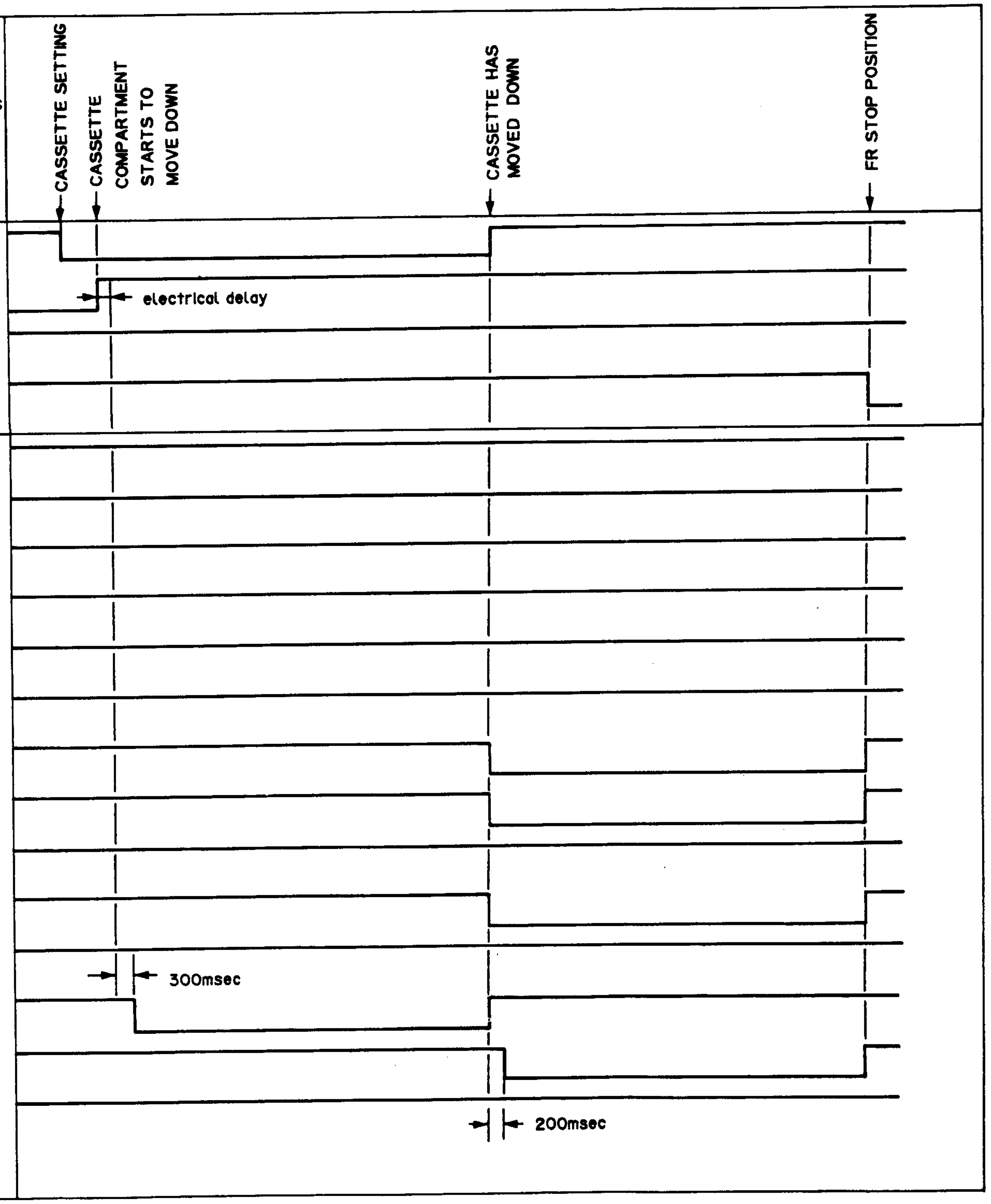
2-11-5. Mode Conversion Diagram and Timing Chart


CASSETTE IN
CASSETTE UP
①
②
CASSETTE DOWN
CASSETTE UP
①
②
FR THREAD
FR UNTHREAD
①
②
FF
③
FR STOP
④
REW
⑤
REC PLAY PAUSE
⑦
⑦
THREAD END
⑨
REC PLAY
⑨
⑨
⑤
⑥
⑦
⑦
⑦
DUB PLAY
⑤
⑥
SEARCH FWD
⑦
SEARCH REV
LONG PAUSE
⑥
⑤
⑥
⑧
⑧
⑦
PAUSE

NOTE: Number in the Figure means title number of
Timing chart (page 2-19 through 2-36).

1. THREADING OPERATION (CASSETTE IN→CASSETTE DOWN→FR STOP POSITION)

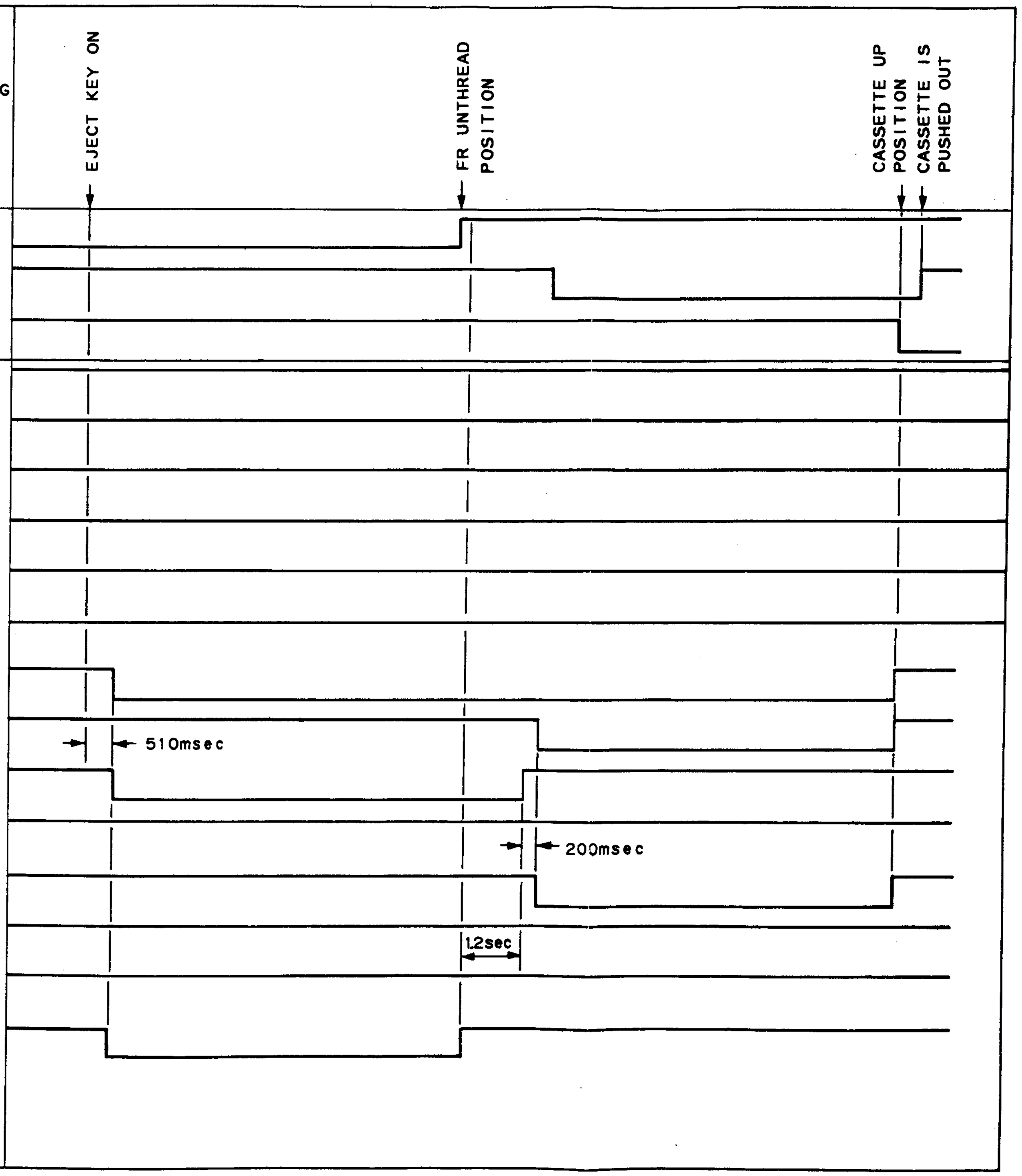
	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	H : CASSETTE DOWN	08 — DIGIT 3	IC7-18
	H : CASSETTE IN	08 — DIGIT 4	IC7-17
	L : THREAD END	OL — DIGIT 4	IC7-5
	L : UNTHREAD END	OL — DIGIT 3	IC7-6
OUTPUT	FWD / $\overline{\text{REV}}$	00 — DIGIT 1	IC7-41
	NORMAL / $\overline{\text{SEARCH}}$	00 — DIGIT 2	IC7-40
	H : DRUM STOP	01 — DIGIT 1	IC7-45
	L : SKEW SOL,ON	02 — DIGIT 2	IC7-48
	L : SEARCH SOL,ON	04 — DIGIT 2	IC7-23
	L : PINCH SOL,ON	04 — DIGIT 3	IC7-22
	L : T-BRAKE SOL,ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL,ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL,ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL,ON	05 — DIGIT 4	IC7-34
	L : C,C, UP	07 — DIGIT 1	IC7-16
	L : C,C, DOWN	07 — DIGIT 2	IC7-15
	L : THREAD MOTOR ON	07 — DIGIT 3	IC7-14
	L : UNTHREAD MOTOR ON	07 — DIGIT 4	IC7-13
			ON SY BOARD


CASSETTE SETTING
CASSETTE COMPARTMENT STARTS TO MOVE DOWN
CASSETTE HAS MOVED DOWN
FR STOP POSITION
electrical delay
300msec
200msec

C.C. = CASSETTE UP COMPARTMENT

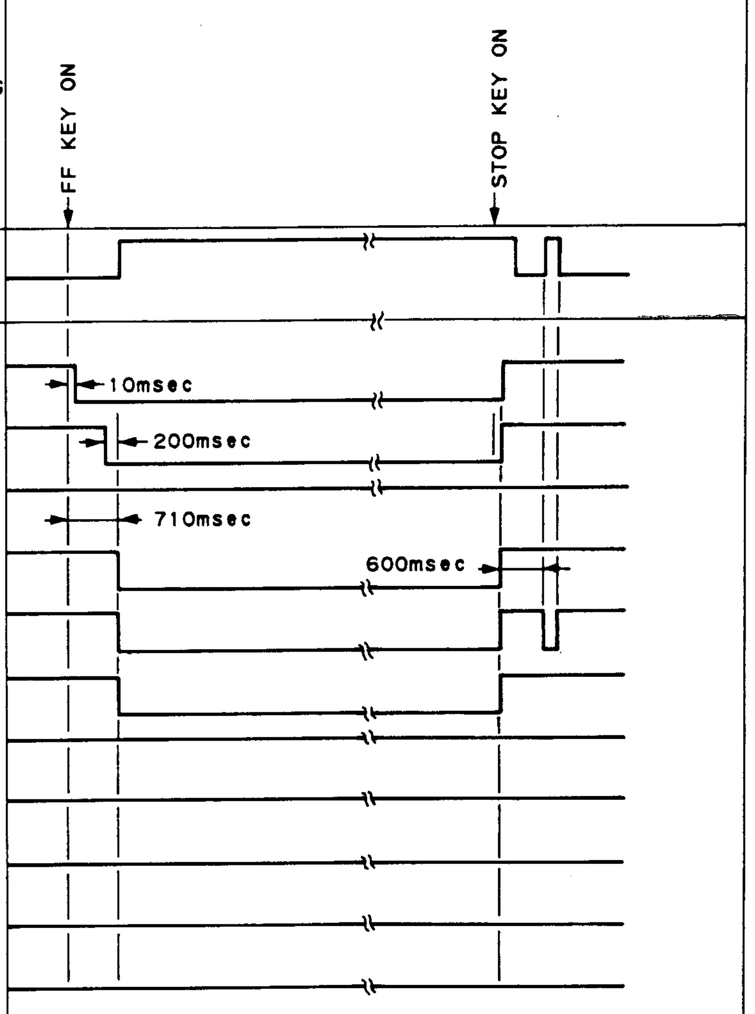
2. UNTHREADING OPERATION (FR STOP POSITION→FR UNTHREAD END POSITION→CASSETTE UP)

	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	L : FR UNTHREAD END	08 — DIGIT 2	IC7-19
	H : CASSETTE DOWN	08 — DIGIT 3	IC7-18
	H : CASSETTE IN	08 — DIGIT 4	IC7-17
OUTPUT	FWD / $\overline{\text{REV}}$	00 — DIGIT 1	IC7-41
	NORMAL / $\overline{\text{SEARCH}}$	00 — DIGIT 2	IC7-40
	H : DRUM STOP	01 — DIGIT 1	IC7-45
	L : SKEW SOL.ON	02 — DIGIT 2	IC7-48
	L : SEARCH SOL.ON	04 — DIGIT 2	IC7-23
	L : PINCH SOL.ON	04 — DIGIT 3	IC7-22
	L : T-BRAKE SOL.ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL.ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL.ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL.ON	05 — DIGIT 4	IC7-34
	L : C.C.UP	07 — DIGIT 1	IC7-16
	L : C.C.DOWN	07 — DIGIT 2	IC7-15
	L : THREAD MOTOR ON	07 — DIGIT 3	IC7-14
	L : UNTHREAD MOTOR ON	07 — DIGIT 4	IC7-13
			ON SY BOARD


EJECT KEY ON
FR UNTHREAD POSITION
CASSETTE UP POSITION
CASSETTE IS PUSHED OUT
510msec
200msec
1.2sec

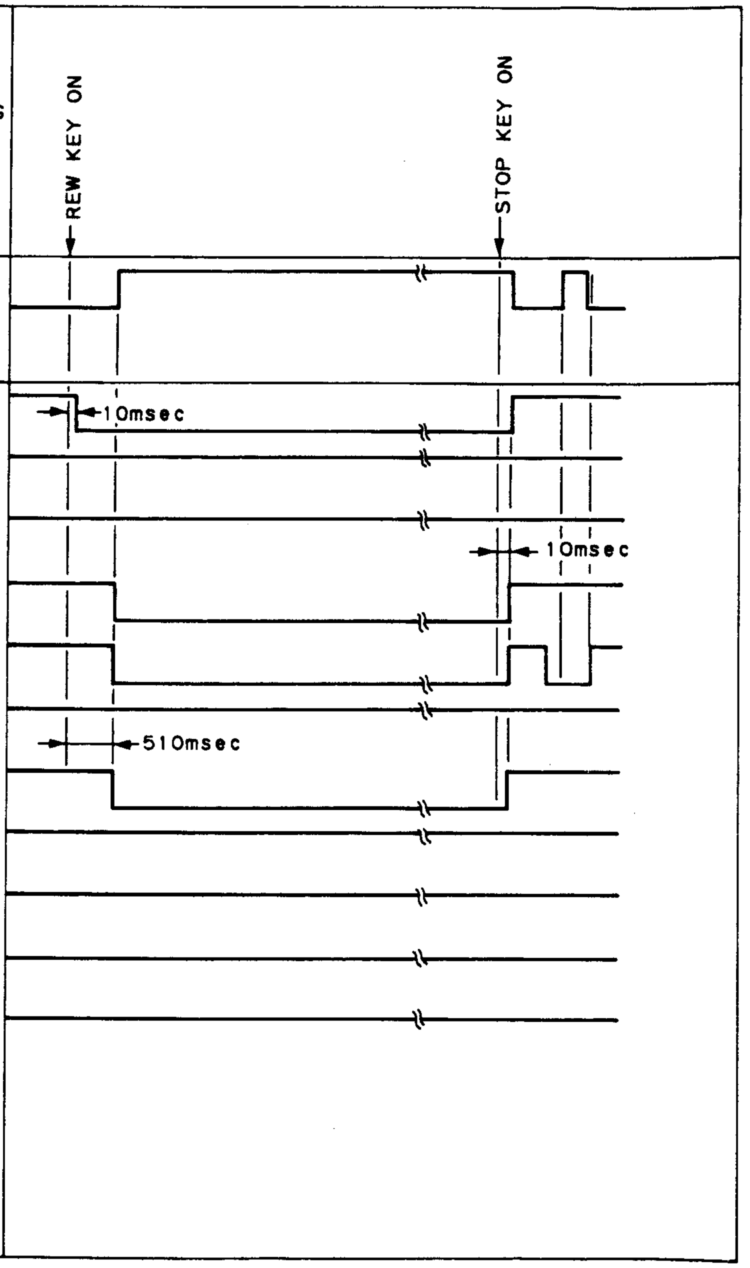
3. FF MODE (FR STOP→FF→FR STOP)

	SIGNRL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	L : REEL STOP	09 — DIGIT 2	
OUTPUT	H : DRUM STOP	01 — DIGIT 1	IC7-45
	L : SEARCH SOL.ON	04 — DIGIT 2	IC7-23
	L : PINCH SOL.ON	04 — DIGIT 3	IC7-22
	L : T-BRAKE SOL.ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL.ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL.ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL.ON	05 — DIGIT 4	IC7-34
	L : C.C.UP	07 — DIGIT 1	IC7-16
	L : C.C.DOWN	07 — DIGIT 2	IC7-15
	L : THREAD MOTOR ON	07 — DIGIT 3	IC7-14
	L : UNTHREAD MOTOR ON	07 — DIGIT 4	IC7-13
			ON SY BOARD


FF KEY ON
STOP KEY ON
10msec
200msec
710msec
600msec

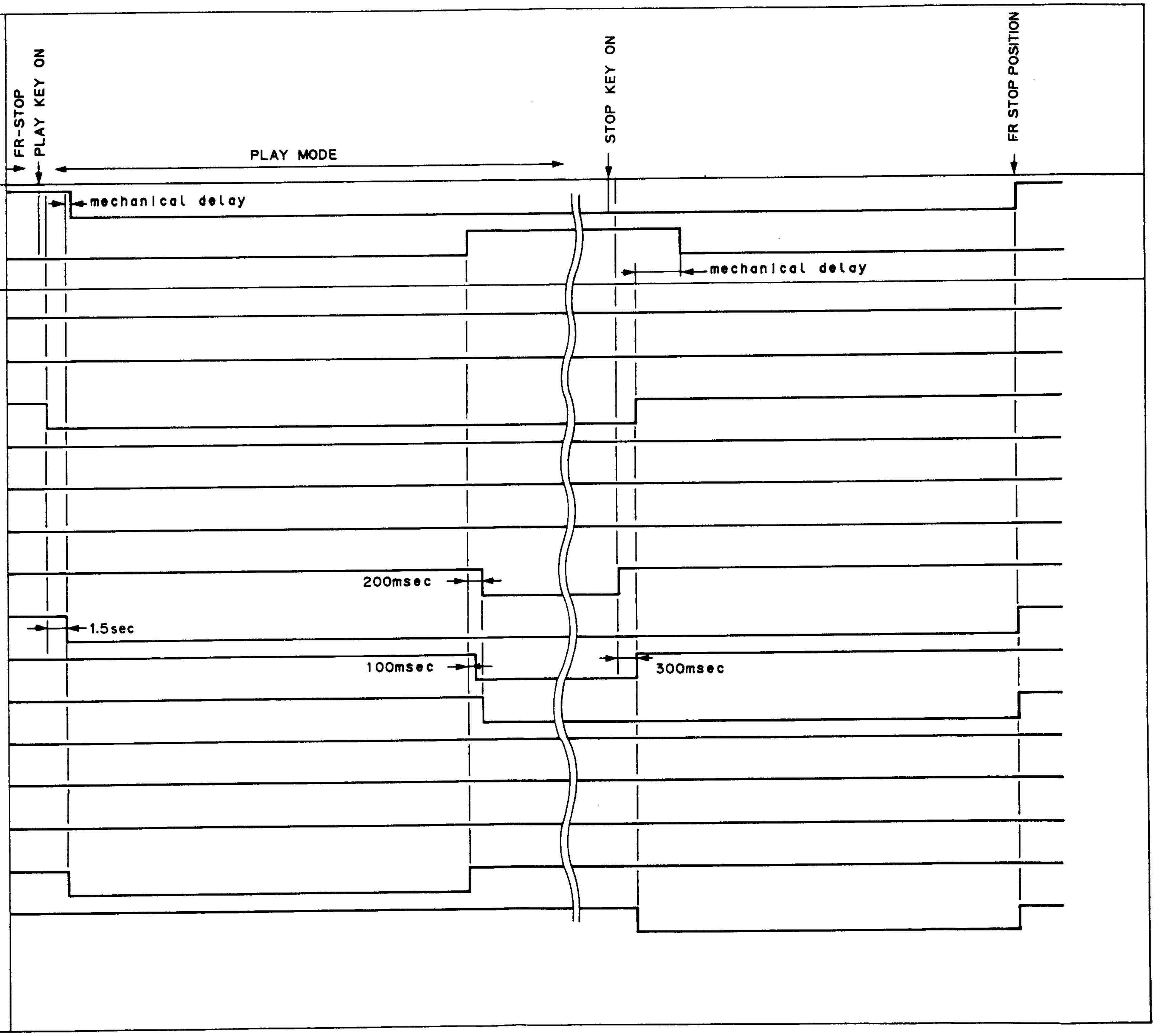
4. REW MODE (FR STOP→REW→FR STOP)

	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	L : REEL STOP	09 — DIGIT 2	
OUTPUT	H : DRUM STOP	01 — DIGIT 1	IC7-45
	L : SEARCH SOL.ON	04 — DIGIT 2	IC7-23
	L : PINCH SOL.ON	04 — DIGIT 3	IC7-22
	L : T-BRAKE SOL.ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL.ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL.ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL.ON	05 — DIGIT 4	IC7-34
	L : C.C. UP	07 — DIGIT 1	IC7-16
	L : C.C. DOWN	07 — DIGIT 2	IC7-15
	L : THREAD MOTOR ON	07 — DIGIT 3	IC7-14
	L : UNTHREAD MOTOR ON	07 — DIGIT 4	IC7-13
			ON SY BOARD



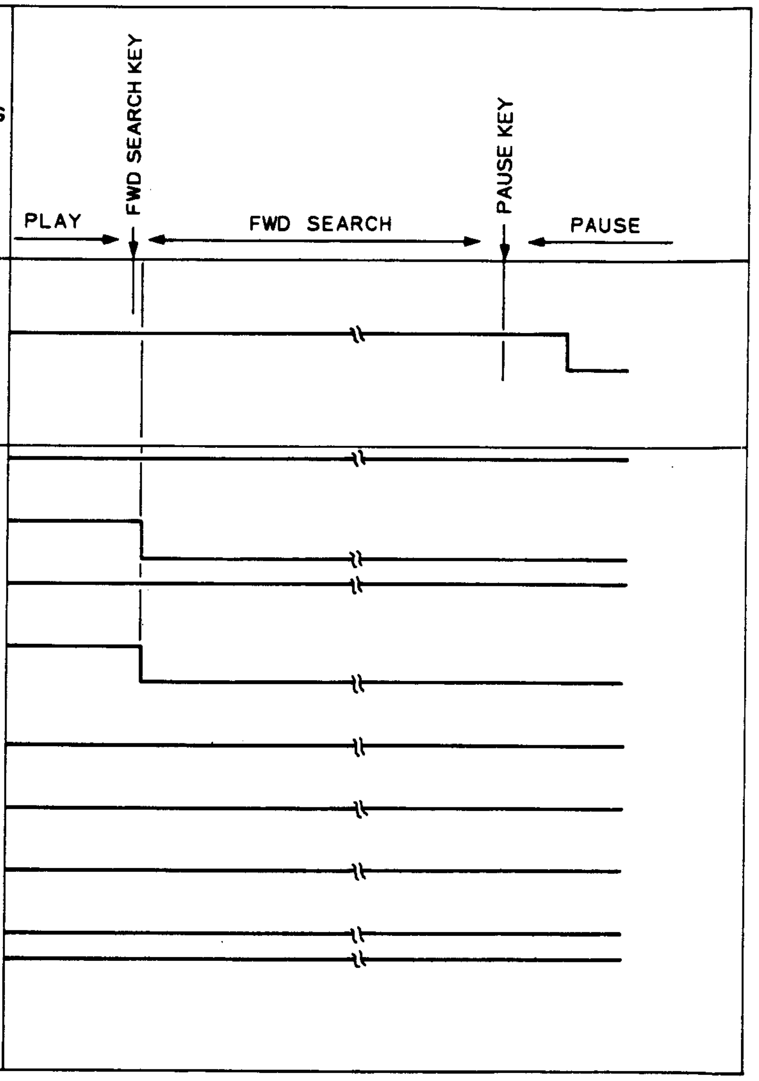
5. PLAY MODE (FR STOP→PLAY→FR STOP)

	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	L : THREAD END	OL — DIGIT 4	IC7-5
	L : UNTHREAD END	OL — DIGIT 3	IC7-6
OUTPUT	FWD / $\overline{\text{REV}}$	00 — DIGIT 1	IC7-41
	NORMAL / $\overline{\text{SEARCH}}$	00 — DIGIT 2	IC7-40
	H : DRUM STOP	01 — DIGIT 1	IC7-45
	L : SKEW SOL.ON	02 — DIGIT 2	IC7-48
	H : REEL STILL	03 — DIGIT 3	IC7-58
	L : SEARCH SOL.ON	04 — DIGIT 2	IC7-23
	L : PINCHH SOL.ON	04 — DIGIT 3	IC7-22
	L : T-BRAKE SOL.ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL.ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL.ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL.ON	05 — DIGIT 4	IC7-34
	L : C.C UP	07 — DIGIT 1	IC7-16
	L : C.C DOWN	07 — DIGIT 2	IC7-15
	L : THREAD MOTOR ON	07 — DIGIT 3	IC7-14
	L : UNTHREAD MOTOR ON	07 — DIGIT 4	IC7-13
			ON SY BOARD


FR-STOP
PLAY KEY ON
PLAY MODE
STOP KEY ON
FR STOP POSITION
mechanical delay
mechanical delay
200msec
1.5sec
100msec
300msec

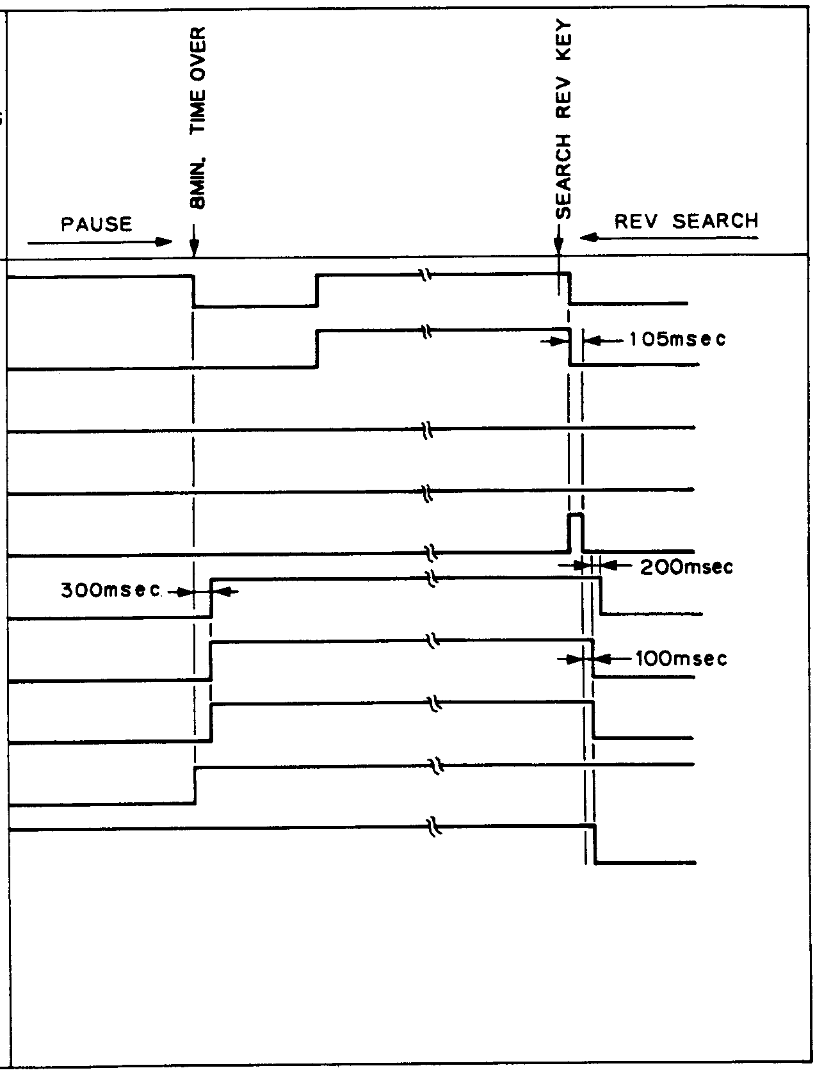
6. PLAY→FWD SEARCH→SEARCH PAUSE

	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	L : CAPSTAN STOP	OL — DIGIT 1	IC7-8
OUTPUT	FWD / $\overline{\text{REV}}$	00 — DIGIT 1	IC7-41
	NORMAL / $\overline{\text{SEARCH}}$	00 — DIGIT 2	IC7-40
	H : REEL STILL	03 — DIGIT 3	IC7-58
	L : SEARCH SOL.ON	04 — DIGIT 2	IC7-23
	L : PINCH SOL.ON	04 — DIGIT 3	IC7-22
	L : T-BRAKE SOL.ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL.ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL.ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL.ON	05 — DIGIT 4	IC7-34
			ON SY BOARD



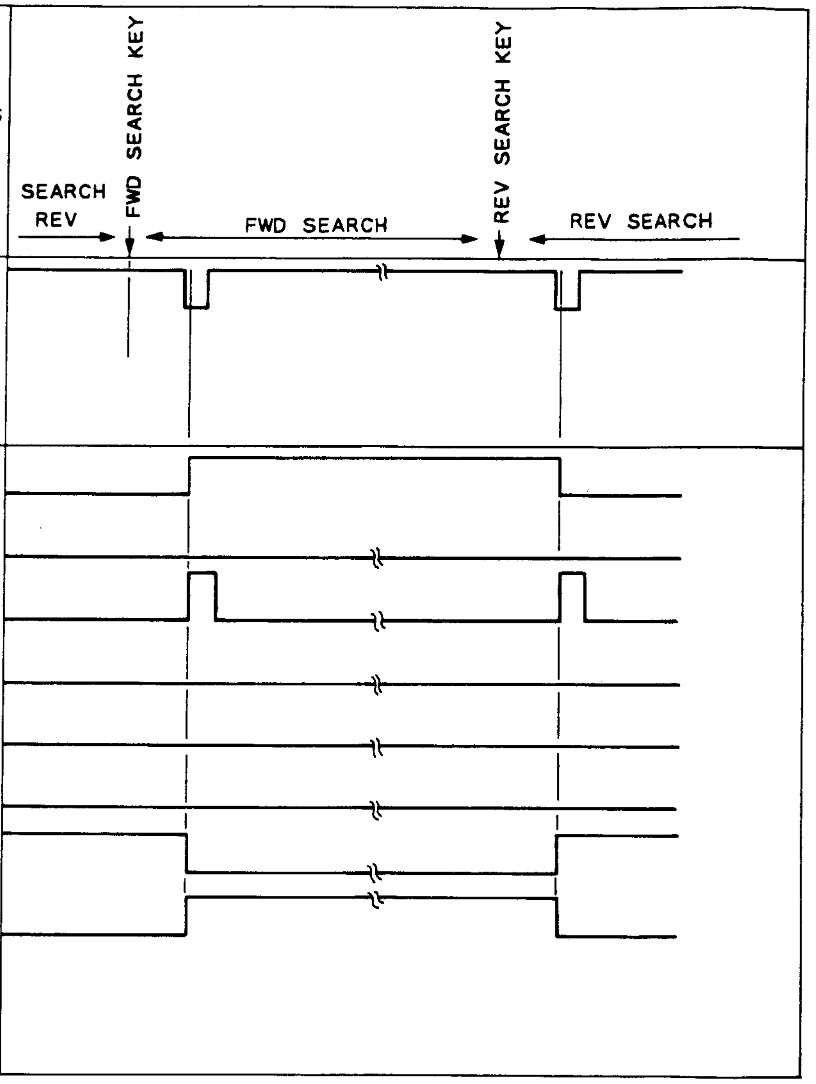
7. PLAY PAUSE→LONG PAUSE→REV SEARCH

	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
OUTPUT	FWD / $\overline{\text{REV}}$	00 — DIGIT 1	IC7-41
	NORMAL / $\overline{\text{SEARCH}}$	00 — DIGIT 2	IC7-40
	H : DRUM STOP	01 — DIGIT 1	IC7-45
	H : REEL STILL	03 — DIGIT 3	IC7-58
	L : SEARCH SOL.ON	04 — DIGIT 2	IC7-23
	L : PINCH SOL.ON	04 — DIGIT 3	IC7-22
	L : T-BRAKE SOL.ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL.ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL.ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL.ON	05 — DIGIT 4	IC7-34
			ON SY BOARD


PAUSE
8MIN. TIME OVER
SEARCH REV KEY
REV SEARCH
105msec
200msec
300msec
100msec

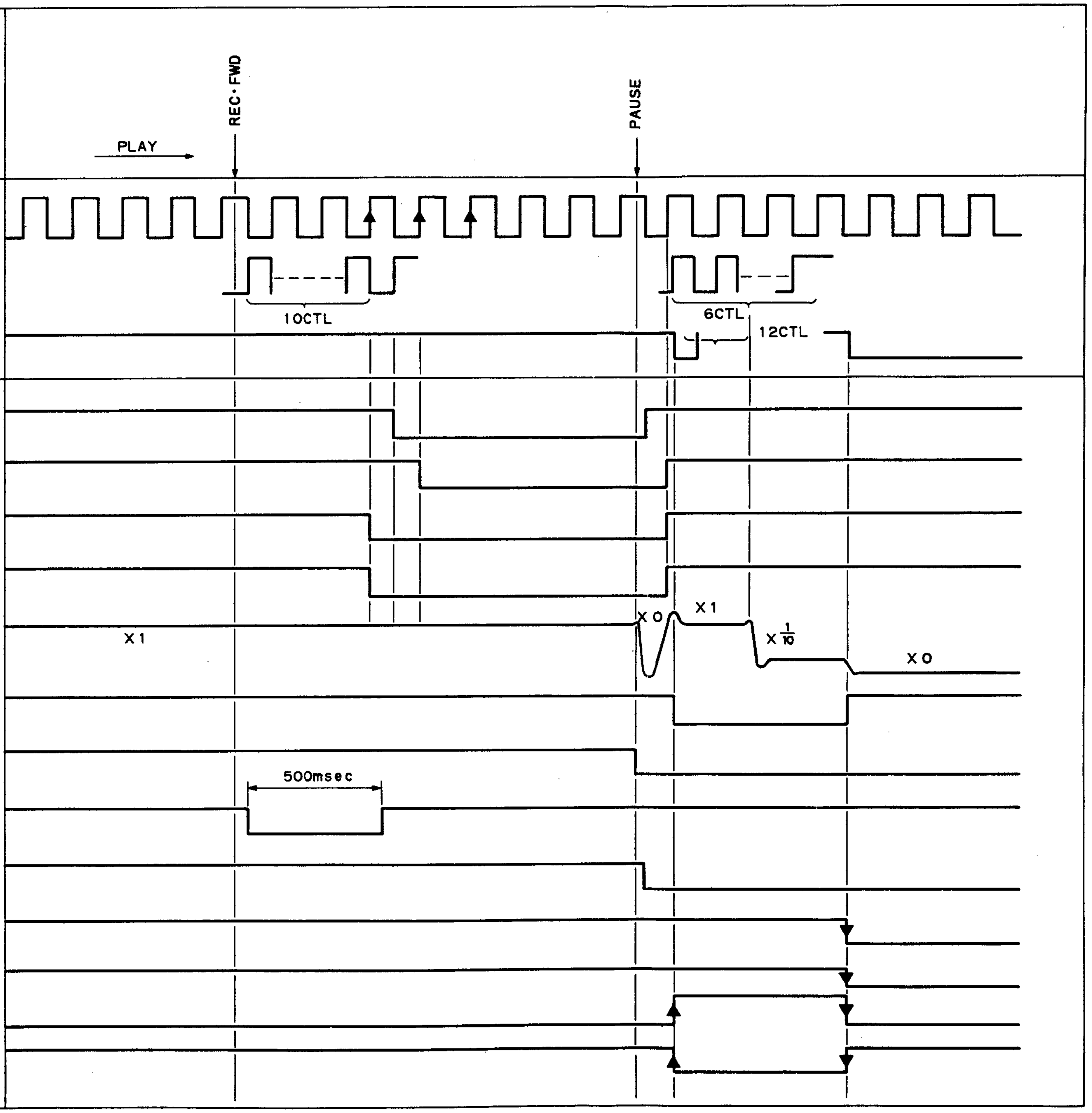
8. REV SEARCH→(FWD PAUSE)→FWD SEARCH→(FWD PAUSE)→REV SEARCH

	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	L : CAPSTAN STOP	OL — DIGIT 1	IC7-8
OUTPUT	FWD / $\overline{\text{REV}}$	00 — DIGIT 1	IC7-41
	NORMAL / $\overline{\text{SEARCH}}$	00 — DIGIT 2	IC7-40
	H : REEL STILL	03 — DIGIT 3	IC7-58
	L : SEARCH SOL.ON	04 — DIGIT 2	IC7-23
	L : T-BRAKE SOL.ON	05 — DIGIT 1	IC7-37
	L : S-BRAKE SOL.ON	05 — DIGIT 2	IC7-36
	L : T-IDLER SOL.ON	05 — DIGIT 3	IC7-35
	L : S-IDLER SOL.ON	05 — DIGIT 4	IC7-34
			ON SY BOARD



9. FWD→(DUB FWD)→REC FWD→REC FWD PAUSE

	SIGNAL	LABEL NUMBER ON DIAGNOSTICS	MEASURING POINT
INPUT	1/2VD		IC7-3
	PB CTL		IC7-28
	L : CAPSTAN STOP	OL—DIGIT 1	IC7-8
OUTPUT	L : VIDEO CH-B REC	02—DIGIT 3	IC7-47
	L : VIDEO CH-A REC	02—DIGIT 4	IC7-46
	L : AUDIO CH-1 REC	01—DIGIT 4	IC7-42
	L : AUDIO CH-2 REC	01—DIGIT 3	IC7-43
	CAPSTAN SPEED	—	—
	FWD/$\overline{\text{REV}}$	00—DIGIT 1	IC7-41
	NORMAL/$\overline{\text{SEARCH}}$	00—DIGIT 2	IC7-40
	L : SKEW SOL. ON	02—DIGIT 2	IC7-48
	L : SEARCH SOL. ON	04—DIGIT 2	IC7-23
	L : T-BRAKE SOL. ON	05—DIGIT 1	IC7-37
	L : S-BRAKE SOL. ON	05—DIGIT 2	IC7-36
	L : T-IDLER SOL. ON	05—DIGIT 3	IC7-35
	L : S-IDLER SOL. ON	05—DIGIT 4	IC7-34


REC·FWD
PAUSE
PLAY
10CTL
6CTL
12CTL
X1
X0
X1
X$\frac{1}{10}$
X0
500msec

2-12. FIXTURE

Part No.	Description
J-6001-820-A	Drum Eccentricity Gauge (3)
J-6001-830-A	Drum Eccentricity Gauge (2)
J-6001-840-A	Drum Eccentricity Gauge (1)
J-6001-930-A	Drum Eccentricity Gauge (4)
J-6009-830-A	Flatness Plate
J-6026-240-A	Adjustment Driver
J-6130-010-A	Reel Table Height Check Base Jig
J-6130-020-A	Reel Table Height Check Jig
J-6153-020-A	Dihedral Adjustment Driver
J-6150-140-A	Eccentricity Screwdriver
J-6153-580-A	Pinch Lever Adjustment Jig
Y-2031-001-0	Cleaning Fluid
2-034-697-00	Cleaning Piece
3-702-216-01	Back Tension Adjustment Jig
7-661-018-01	Sony Oil
7-732-050-20	Tension Scale (50g)
7-732-050-30	Tension Scale (100g)
7-732-050-40	Tension Scale (200g)
7-732-050-50	Tension Scale (500g)
8-899-999-53	Torque Measurement Tape
8-960-015-04	Alignment Tape, RR5-3 SA
8-960-035-61	Alignment Tape, RR5-2 SC PAL
9-911-053-00	Thickness Gauge

SECTION 3
PERIODIC CHECK AND MAINTENANCE

It is recommended that the following maintenance and the periodic check be performed as refering to the Hours Meter of the front panel for the best operation of the function and performance of the unit and for prolonging the live of the unit and the tape.

3-1. MAINTENANCE AFTER REPAIRS

Perform the following maintenance after repairs regardless of the operating hours of the unit.

(1) Cleaning of the video heads
- Press a cleaning piece moistened with cleaning fluid to the drun and turn it slowly with the hand. (Never turn the motor with electric power to clean.)
- Never move the cleaning piece in a vertical direction of the head tip during cleaning. It might damage the head tips.

(2) Cleaning of the tape path system
- Wipe the tape bearing surfaces (such as tape guides, drum, capstan, and pinch roller) with a cleaning piece moistened with cleaning fluid.

(3) Cleaning of the drive system
- Wipe the drive system (such as belt, idler, and reel table surface) with a cleaning piece moistened with cleaning fluid.

3-2. PERIODIC CHECK

Perform the maintenance checks described separately in accordance with the operational hours of the unit.

3-3. OTHERS

(1) Sony Oil
- Be sure to use Sony Oil as the lubrication oil. (If any other oil is used, various troubles might occur because of different viscosity.)

Sony Oil : Part No. 7-661-018-01
- Use Sony Oil in which dust or other foreign material have not been mixed for lubricating the bearing. (If foreign material is in the oil, wear or burning of the bearing might occur.)

(2) Grease

Be sure to use the following grease.

Sony grease : Part No. 7-662-001-62 (SGL-501)

(3) Overhaulling of the equipment

When overhaulling the equipment is attempted, replace parts at the intervals indicated in the chart on page 3-2. For parts not in the list, such as motors and heads, refer the following items. (It supporse the usualy state of use.)

- Reel motor : about 3,000 H
- Capstan motor : about 3,000 H
- Threading motor : about 30,000 times
- Cassette-up compartment motor
  : about 30,000 times
- Audio/CTL head : about 3,000 H
- CTL head : about 3,000 H

■ : apply oil ○ : cleaning ◆ : replace ◇ : check ◎ : apply grease

Item	Operating Hours (H) Part No. of Replacement Parts	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Tape path cleaning	———	○	○	○	○	○	○	○	○	○	○	Perform whenever repair work is attempted *NOTE 1
Cleaning and replacement of the video head	A-6709-561-A	○	◆	○	◆	○	◆	○	◆	○	◆	Life of the video heads are affected extensively by operating ambient conditions *NOTE 2
Replacement of pinch roller	A-6750-226-A	○	◆	○	◆	○	◆	○	◆	○	◆	Life of the pinch roller are affected extensively by operating systems *NOTE 3.
Replacement of the F FWD/REW idler belt	3-668-785-00	○	○	○	◆	○	○	○	◆	○	○	———
Replacement of the reel table	A-6739-017-A	○	■	○	◆	○	■	○	◆	○	■	
Replacement of R brake shoe	X-3668-737-0	—	—	—	◆	—	—	—	◆	—	—	
Replacement of brake band	X-3668-707-0	—	—	—	◆	—	—	—	◆	—	—	
Replacement of belt on gear box	3-672-737-01	○	○	○	○	○	○	○	◆	○	○	———
Replacement of belt on cassette-up compartment	3-653-387-00	○	○	○	○	○	○	○	◆	○	○	———
Cleaning the threading roller shaft on the threading ring	———	—	○	—	○	—	○	—	○	—	○	Clean with a cloth moistened with cleaning fluid *NOTE 4
Apply a grease on the ring rollers	———	—	◎	—	◎	—	◎	—	◎	—	◎	Apply grease on the surface of the ring roller
Check the FWD back tension	———	—	◇	—	◇	—	◇	—	◇	—	◇	*NOTE 5
Check the FWD torque	———	—	◇	—	◇	—	◇	—	◇	—	◇	*NOTE 6
Check the REV torque	———	—	◇	—	◇	—	◇	—	◇	—	◇	*NOTE 7
Check the brake torque	———	—	—	—	◇	—	◇	—	◇	—	◇	*NOTE 8

*NOTE 1 :Refer to Section 3-1.

*NOTE 2 :Refer to Section 3-1.

*NOTE 3 :After this replacement, perform the adjustments as follows: Section 4-9 "Pinch Roller Replacement".

*NOTE 4 :Refer to Section 4-6.

*NOTE 5 :Refer to Section 6-6.

*NOTE 6 :Refer to Section 6-3.

*NOTE 7 :Refer to Section 6-4.

*NOTE 8 :Refer to Section 6-1.

SECTION 4
REPLACEMENT OF MAJOR PARTS

4-1. REPLACEMENT OF THE UPPER DRUM

. The Rotary Video Heads cannot be replaced individually. The entire Upper Drum Assembly should be replaced when any of these heads fails.

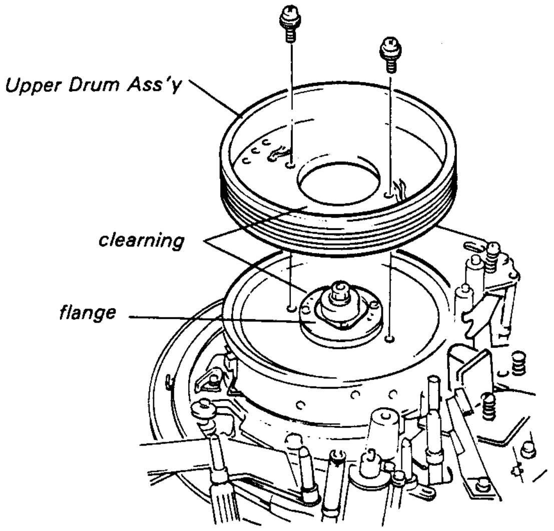
Tool: Drum eccentricity gauge (1)
Drum eccentricity gauge (2)
Drum eccentricity gauge (3)
Drum eccentricity gauge (4)

Replacement procedure:

(1) Unsolder the four leads of the video head from the printed circuit board. Remove the two fixing screws and then remove the Upper Drum Assembly from the Head Drum Assembly.

(2) Clean the matching surfaces of the flange and new Upper Drum Assembly with a cloth moistened with cleaning fluid. (If there is a spacer between the drum and the flange, it should be left on the flange. If the spacer is lost, correct interchangability cannot be obtained.)

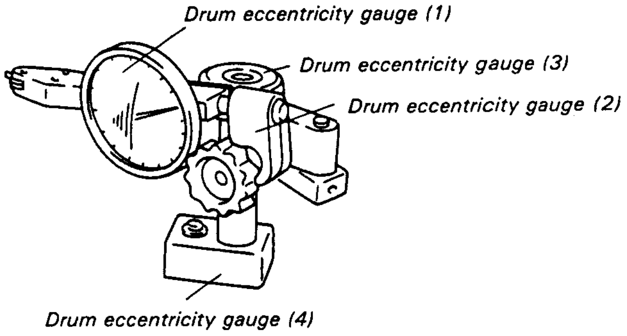
(3) Place the Upper Drum Assembly as shown in the figure. Thread the two fixing screws snugly but do not tighten them.


Upper Drum Ass'y
clearning
flange

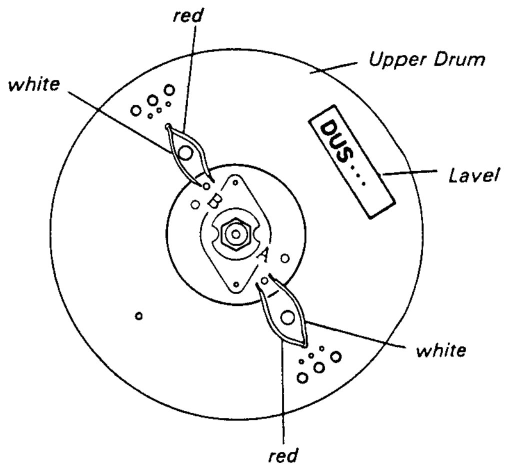
Adjustment procedure:

(1) Remove the S Guard Block. (The connector at the bottom of the S Guard is inserted into the connector on the chassis.)

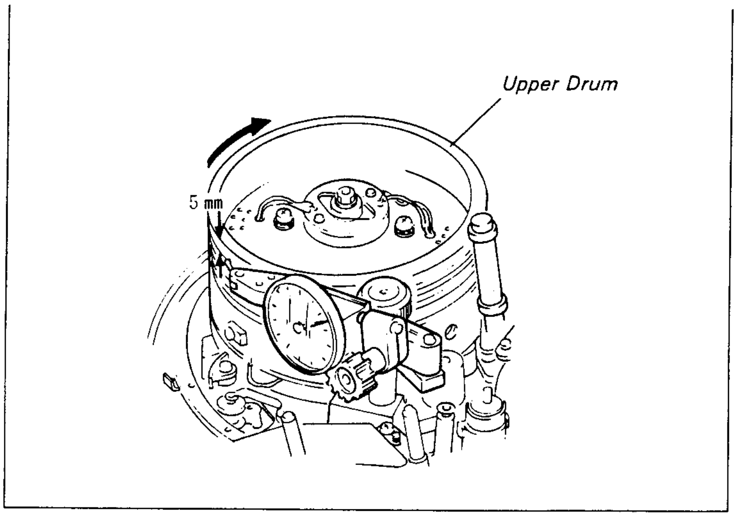
(2) Assemble the Drum Eccentricity Gauges (1), (2), (3) and (4) as shown in the figure. Set the assembled gauges on the unit so that the probe tip is positioned at a point about 5 mm from the top edge of the Upper Drum.


Drum eccentricity gauge (1)
Drum eccentricity gauge (3)
Drum eccentricity gauge (2)
Drum eccentricity gauge (4)

(3) Turn the Upper Drum slowly in the clockwise direction and check that the gauge deflection is within 5 microns during one complete revolution of the Upper Drum. If it is within specification, proceed with the Step (5). If it is not, perform Step (4).


red
white
Upper Drum
DUS...
Lavel
B
A
white
red

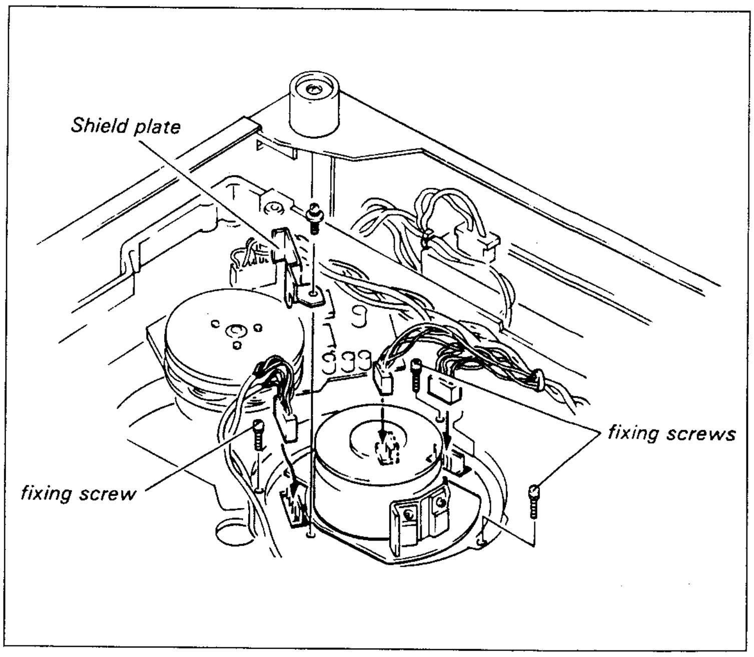
(4) Tap the inside of the Upper Drum with a nylon hammer or a screwdriver handle until the gauge deflection remains within 5 microns.
(5) After the adjustment, alternately tighten the two fixing screws of the Upper Drum. (Tightening torque: 14 to 16 kg-cm)
(6) After tightening the screws, check that the gauge deflection is within 5 microns.
(7) Solder the four leads from the video heads to the printed circuit board as shown in the figure.
(8) Install the S Guard Block. (Insert the connector at the bottom of the S Guard Block securely into the connector on the chassis.)
(9) Adjust as described in Section 4-11.



4-2. REPLACEMENT OF THE DRUM ASSEMBLY

Replacement procedure:

(1) Remove the Shield Plate.
(2) Disconnect the three connectors of the drum assembly on the back of the unit.
(3) Remove the three fixing screws which hold the drum.
(4) Install the drum on the base while turning the drum assembly in the clockwise direction when viewed from top of the unit.
(5) Connect the three connectors.
(6) Tighten the fixing screw of the Shield Plate.
(7) Adjust as descrebed in Section 4-11.



4-3. REPLACEMENT OF THE CAPSTAN MOTOR

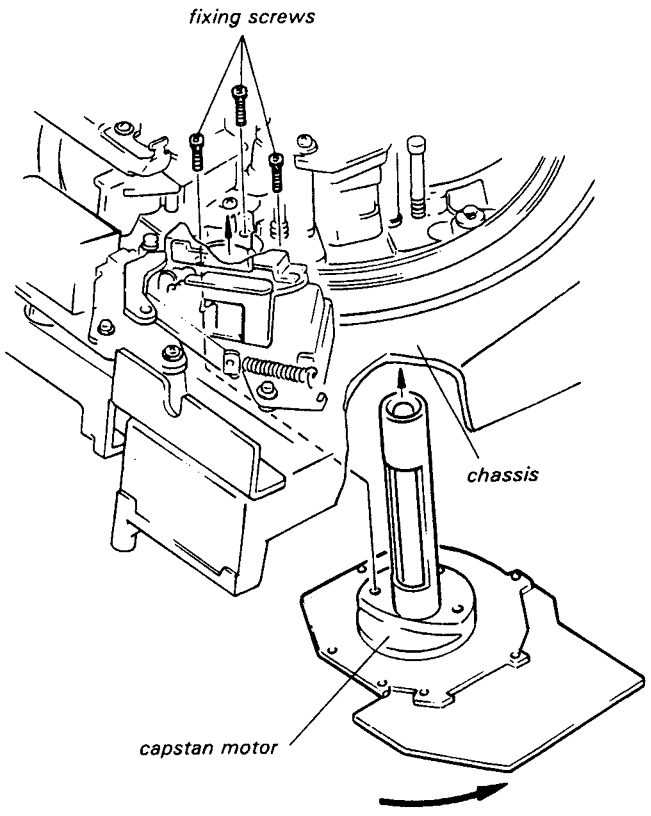
Replacement procedure:

(1) Remove the Capstan Motor from the unit.

(2) Install the new Capstan Motor and thread the three fixing screws snugly but do not tighten them.

(3) Tighten the fixing screws while turning the Capstan Motor in the direction of the arrow.

(4) Adjust as described in Section 4-11.


fixing screws
chassis
capstan motor

4-4. REPLACEMENT OF THE CTL HEAD

Replacement procedure:

(1) Disconnect CN341 on the EC-28 Board.

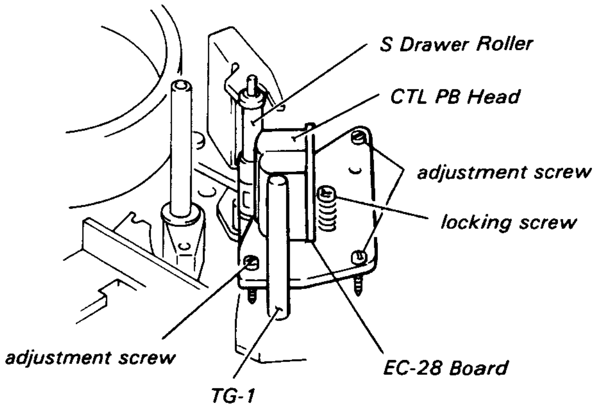
(2) Remove the locking screw and remove the CTL PB Head Block from the unit. Never tighten or loosen the three adjustment screws.

(3) Remove the two fixing screws at the bottom of the bracket and remove the head.

(4) Remove the EC-28 Board from the head and solder it to the new head.

(5) Perform steps (1) to (3) in reverse order.

(6) Adjust as described in Section 4-11.


S Drawer Roller
CTL PB Head
adjustment screw
locking screw
adjustment screw
EC-28 Board
TG-1

4-5. REPLACEMENT OF THE S DRAWER ROLLER

Replacement procedure:

(1) Put the unit into the EJECT completion mode without a cassette tape.

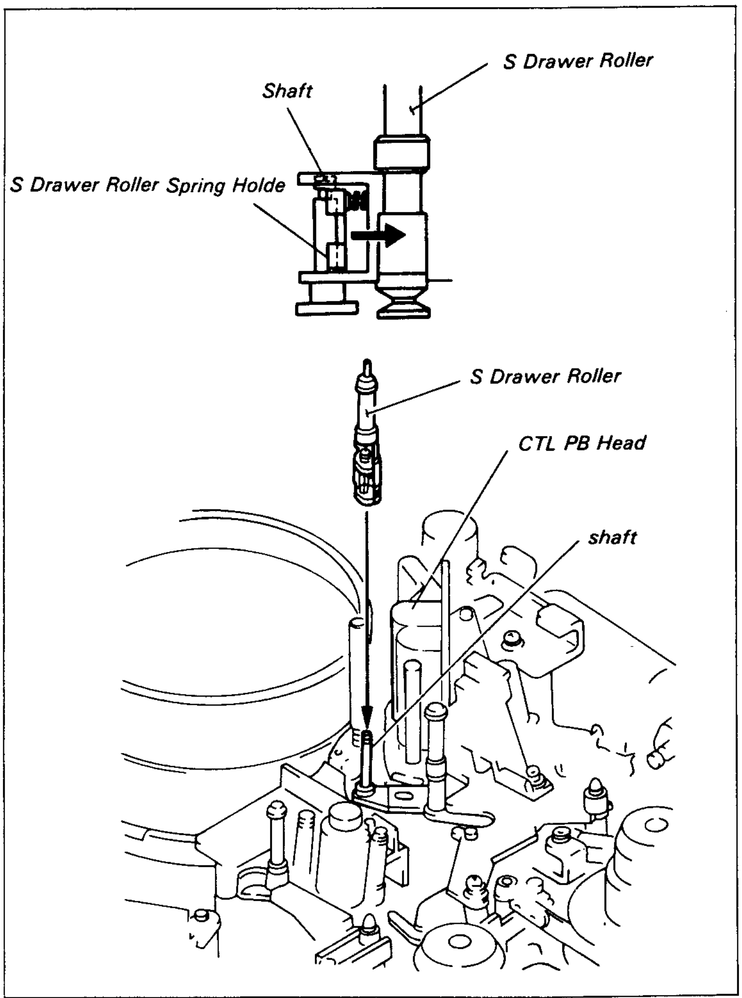
(2) Turn the pulley of the Gear Box by hand until the S Drawer Roller comes in front of the CTL PB Head.

(3) Remove the S Drawer Roller from the shaft while pushing the spring holder in the direction of the arrow.

(4) Smear a little Sony Grease in the notch at the bottom of the new S Drawer Roller.

(5) While pushing the spring holder in the direction of the arrow, install the new S Drawer Roller onto the shaft until the S Drawer Roller locks to the shaft.

(6) Adjust as described in Section 4-11.


S Drawer Roller
Shaft
S Drawer Roller Spring Holde
S Drawer Roller
CTL PB Head
shaft

4-6. REPLACEMENT / ADJUSTMENT OF THE TAPE GUIDES ON THE THREADING RING

. There are three tape guides on the Threading Ring. This section describes the replacement of the three tape guides and the width adjustment of the two tape guides.

tool: slide vernier callipers of equivalent
L-shaped hexagonal wrench
(across flat has 1.27 mm)

Replacement procedure:

(1) Loosen the set screw of the boss and remove the guide shaft.

(2) Clean the guide shaft with a cloth moistened with cleaning fluid.

(3) Assemble the guide.

(4) Adjust the height of the sub-ring guide as shown in the figure.

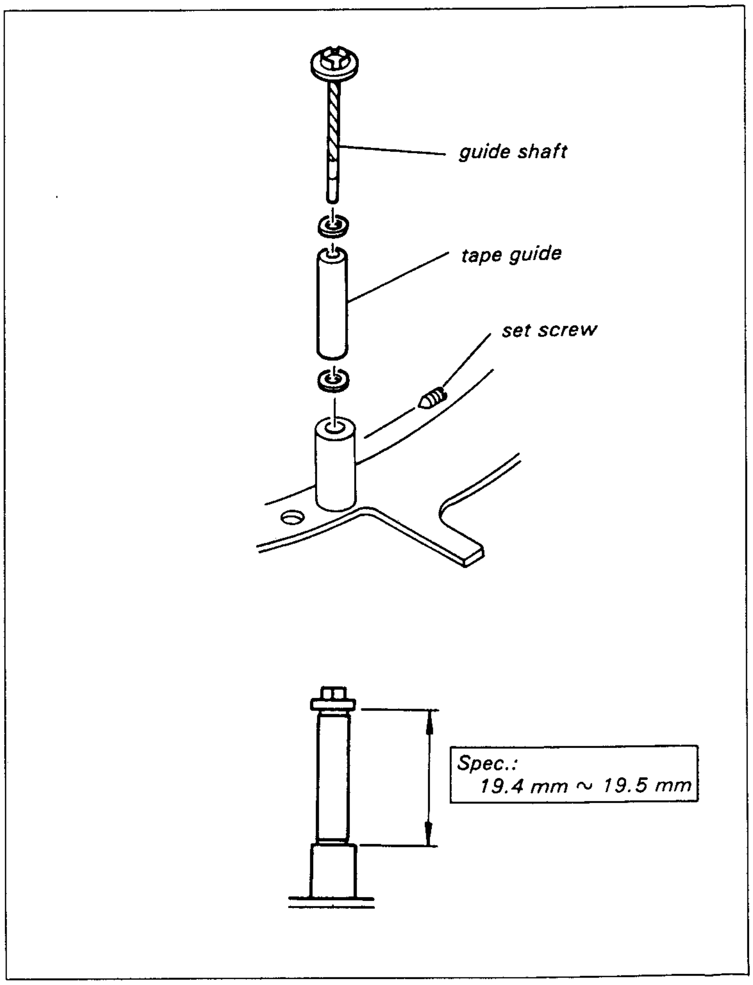
(5) Adjust as described in Section 4-11.

Adjustment procedure:

(1) Adjust the height of the tape guide and tighten the set screw of the boss. Check that the guide roller turns smoothly.

(2) Insert the cassette tape and put the unit into the PLAY mode. Check that the tape runs along the upper flange of the tape guide without curling.

(3) Adjust as described in Section 4-11.



4-7. REPLACEMENT OF THE AUDIO/CTL HEAD

Replacement procedure:

(1) Remove the Audio/CTL Head Block from the unit after removing the three fixing screws as shown in the figure.

(2) Remove the Audio/CTL Head and the shield case (F and B) after removing the two fixing screws as shown in the figure.

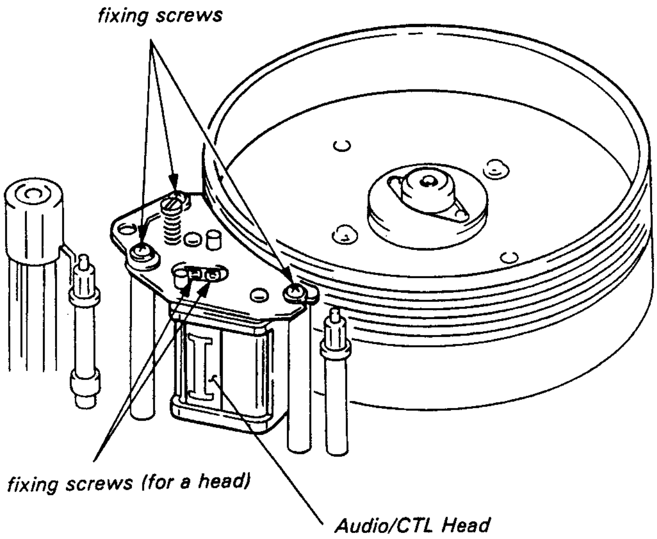
(3) Remove the two fixing screws from the shield case.

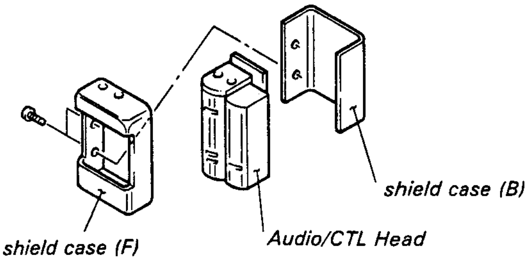
(4) Unsolder the ten leads from the printed circuit board and remove the DUS-92 Board from the head.

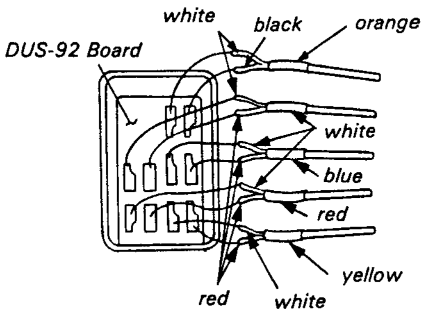
(5) Replace the head with a new one and solder the leads to the DUS-92 Board as shown in the figure.

(6) Perform steps (1) to (3) in reverse order.

(7) Adjust as described in Section 4-11.


fixing screws
fixing screws (for a head)
Audio/CTL Head


shield case (B)
shield case (F)
Audio/CTL Head


white
black
orange
DUS-92 Board
white
blue
red
yellow
red
white

4-8. REPLACEMENT OF THE THREADING RING

Replacement procedure:

(1) Remove the E Head Base Block from the unit after removing the three fixing screws.

(2) Remove the S Guard Assembly and the FR Detector from the unit.

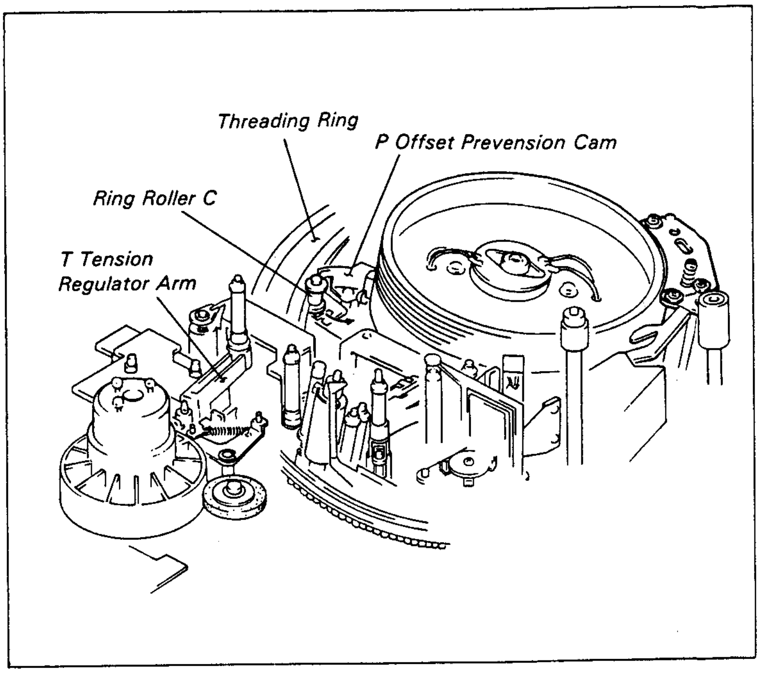
(3) Loosen the two fixing screws from the Threading Gear Block and remove it from the Threading Ring.

(4) Loosen the fixing screw and then move the Ring Roller (C) and the P Offset Prevention Cam in the direction of the arrow.

(5) Remove the Threading Ring from the unit and replace it with a new one.

(6) Perform steps (1) to (4) in reverse order.

(7) Adjust as described in Section 4-11.


Threading Ring
P Offset Prevension Cam
Ring Roller C
T Tension
Regulator Arm

4-9. REPLACEMENT OF THE PINCH ROLLER

Replacement procedure:

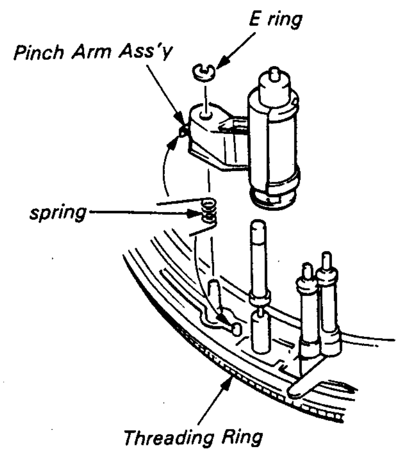
(1) Turn the pulley of the Gear Box until the S Drawer Roller is in front of the CTL PB Head.

(2) Remove the Pinch Arm Assembly from the Threading Ring after removing the E ring.

(3) Replace the Pinch Roller Assembly with a new one.

(4) Install the Pinch Roller Assembly on the Threading Ring as shown in the figure.

(5) Adjust as described in Section 4-11.



4-10. REPLACEMENT OF THE THREADING GEAR BOX SYSTEM

4-10-1. Replacement of the Threading Gear Box

Replacement procedure:

(1) Put the unit into the EJECT mode and turn the power OFF.

(2) Remove the T Tape Sensor from the gear box after removing the fixing screw.

(3) Remove the two fixing screws of the gear box after turning the pulley 1 revolution in the direction of arrow A, Move the gear box in the direction of arrow B and remove it from the unit.

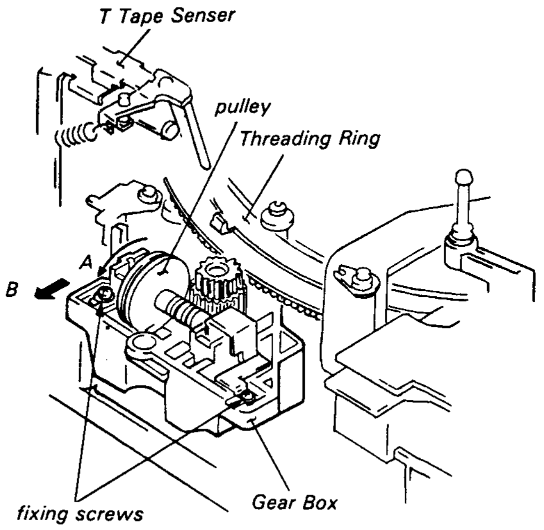
(4) Remove the harness from the clamper and disconnect CN511 from the SY-106A Board.

(5) Replace the gear box with a new one.

(6) Perform steps (3) and (4) in reverse order.

(7) Put the gear box on the chassis and thread the two fixing screws snugly but do not tighten them. Tighten the two fixing screws of the gear box after meshing the Threading Ring to the gear.

(8) Adjust as described in Section 4-11.



4-10-2. Replacement of the Threading Motor

Tool: L-shaped hexagonal wrench
(across flat has 1.5 mm)

Replacement procedure:

(1) Perform steps (1) to (4) of Section 4-10-1, Replacement of the Threading Gear Box.

(2) Remove the gear after removing the stop ring.

(3) Remove the belt from the motor pulley. Remove the plate from the frame after removing the fixing screw.

(4) Remove the pulley while pushing the hook in the direction of the arrow as shown in the figure.

(5) Remove the motor block from the frame after removing the two fixing screws.

(6) Loosen the set screw and remove the motor pulley.

(7) Remove the motor from the motor bracket after removing the two fixing screws.

(8) Remove the shield case and unsolder the LM-13 Board. Replace the motor with a new one.

(9) The pole of the motor is as shown in the figure. Solder the plus terminal of the motor to the plus pad of the LM-13 Board.

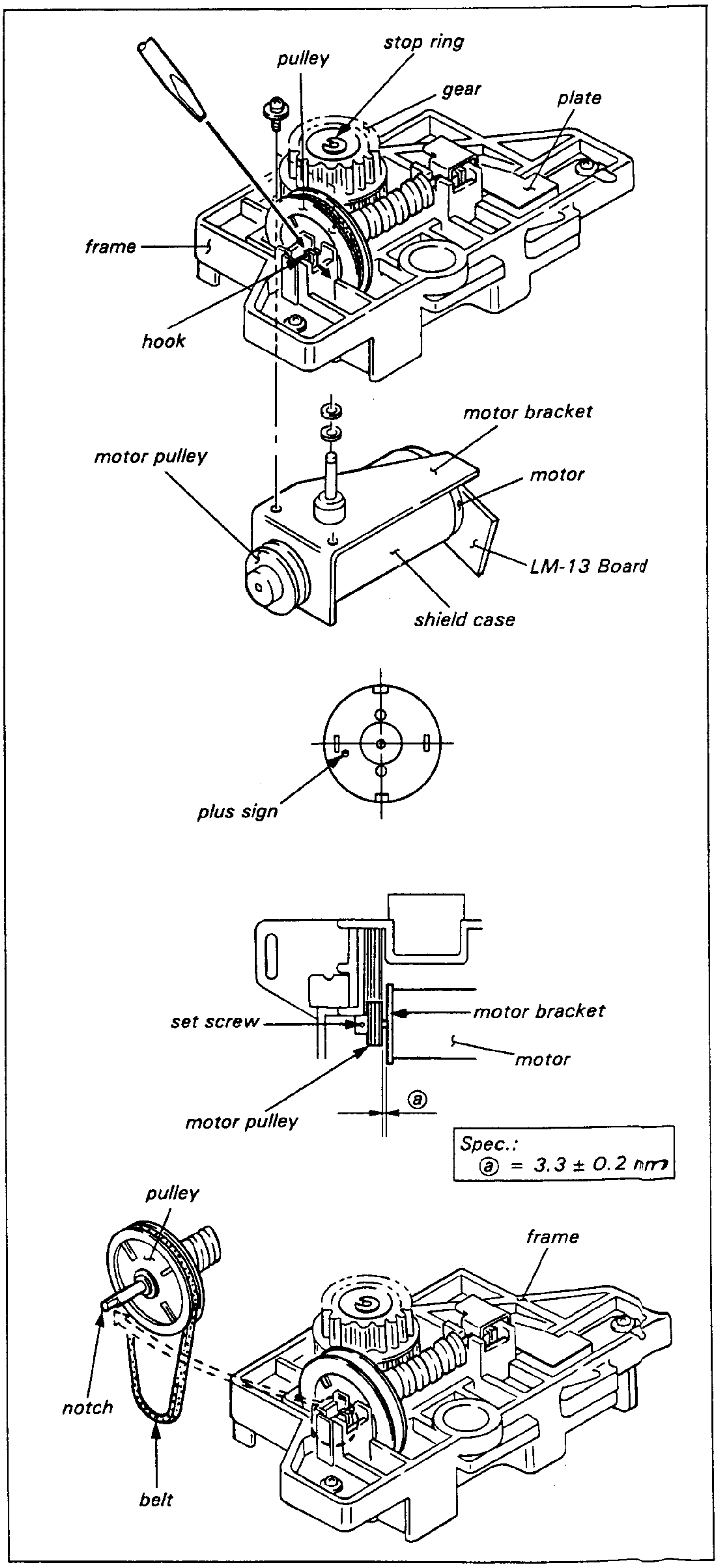
(10) Install the shield case to the motor.

(11) Install the motor to the frame as shown in the figure. Peform steps (4) to (6) in reverse order. Check that the clearance between the motor pulley and the bracket meets the required specification.

(12) Hook the belt to the pulley and install the pulley on the frame. Be sure that the orientation of the notch of the pulley shaft is as shown in the figure.

(13) Hook the belt to the motor pulley. Check that the belt is not twisted.

(14) Check as described in Section 4-11.


pulley
stop ring
gear
plate
frame
hook
motor bracket
motor pulley
motor
LM-13 Board
shield case
plus sign
set screw
motor bracket
motor
motor pulley
ⓐ
Spec.:
ⓐ = 3.3 ± 0.2 mm
pulley
frame
notch
belt

4-10-3. Replacement of the Threading Belt

Replacement procedure:

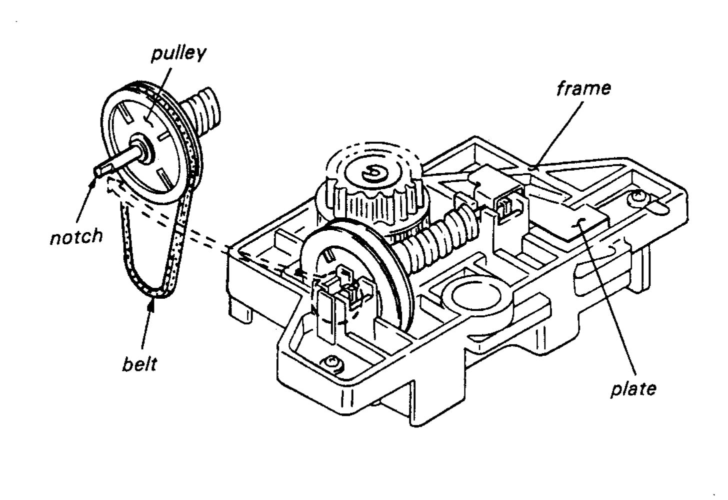
(1) Perform steps (1) to (3) in Section 4-10-2, Replacement of the Threading Motor.

(2) Clean the new belt and the groove of the pulley with a cloth moistened with cleaning fluid.

(3) Hook the belt to the pulley and install them to the frame. Be sure that the orientation of the notch of the pulley shaft is as shown in the figure.

(4) Install the plate to the frame and hook the belt to the Motor pulley. Check that the belt is not twisted.

(5) Check as described in Section 4-11.



4-11. ITEMS TO BE ADJUSTED AFTER MAIN PARTS REPLACEMENT

(Nambers in parenthesis refer to Section Nos.)

Replacement of Threading Ring

Threading Ring Rotation Adjustment (5-3-1) → Gear Box Position Adjustment (5-3-2) → FR Detector Block Mounting Position Adjustment (5-3-4) → Pinch Roller Position Adjustment (5-3-3) → Pinch Lever Pre-set Adjustment (5-4-1) → Pinch Roller Pre-set Adjustment (5-4-2) → Leaf Spring Position Adjustment (5-9) → F FWD/REW Modes Tape Path Adjustment (7-1) → T Correction Guide Slantness Adjustment (7-2) → Tape Path Adjustment Around Pinch Roller (7-6) → PLAY Mode Tape Path Adjustment (1) (7-3) → PLAY Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Video Tracking Adjustment (7-7-1) → CTL PB Head Height/Azimuth/Zenith Adjustments (7-7-2) → Video Tracking Adjustment (check) (7-7-1)

Replacement of Pinch Roller

Pinch Roller Self Alignment Adjustment (5-3-3) → Pinch Roller Pre-set Adjustment (5-4-2) → → PLAY Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → → Tape Path Adjustment Around Pinch Roller (7-6) → Video Tracking Adjustment (check)(7-7-1)

Replacement of Take-up Reel Table

Reel Table Height and Vertical Play Adjustment (5-1-2) → T Brake Torque Adjustment (6-1-2) → REW Brake Torque Adjustment (6-1-3) → F FWD/REW Torque Adjustment (6-2) FWD Torque Adjustment (6-3) → F FWD/REW Modes Tape Path Adjustment (7-1)

Replacement of Supply Reel Table

Reel Table Height and Vertical Play Adjustment (5-1-2) → S Brake Torque Adjustment (6-1-1) → F FWD/REW Torque Adjustment (6-2) → REV Torque Adjustment (6-4) → FF Back Tension Adjustment (6-5) → FWD Back Tension Adjustment (6-6) → Video Tracking Adjustment (check) (7-7-1)

Replacement of Brake Band

FF Back Tension Adjustment (6-5) → FWD Back Tension Adjustment (6-6)

Replacement of Capstan Motor

Pinch Lever Right Angle Adjustment (5-10) → Pinch Roller Self Alignment Adjustment (5-3-3) → Capstan Search Speed Adjustment → Capstan FWD/REV Detector Adjustment → Capstan Free Speed Adjustment → Capstan Stop Servo Adjustment → PLAY Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Tape Path Adjustment Around Pinch Roller (7-6) → Video Tracking Adjustment (check)(7-7-1)

Replacement of Threading Motor

Gear Box Position Adjustment (5-3-2)

Replacement of Reel Motor

FWD Torque Adjustment (6-3) → REV Torque Adjustment (6-4)

Replacement of CTL PB Head

CTL PB Head Height/AZimuth/Zenith Adjustments (7-7-2) → Video Tracking Adjustment (check) (7-7-1)

Replacement of Audio/CTL Head

Audio Head Height Adjustment (7-7-3) → Audio Head Azimuth Adjustment (7-7-5) → Video Tracking Adjustment (7-7-1) → Audio Head Height Adjustment (7-7-3) → Audio Head Azimuth Adjustment (7-7-5) → Audio Head Phase Adjustment (7-7-6) → Audio/CTL Head Position Adjustment (7-7-7) → Audio System Alignment (all of Section 10)

Replacement of Drum Assembly

Tracking Adjustment (7-7) → F FWD/REW Modes Tape Path Adjustment (7-1) → PLAY Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Video Head Dihedral Adjustment (7-8) → Drum AFC Level Adjustment → Drum AFC Transient Adjustment → Switching Position Adjustment

Replacement of Upper Drum Assembly

Replacement of Upper Drum (4-1) → Tracking Adjustment (7-7) → F FWD/REW Modes Tape Path Adjustment (7-1) → PLAY Mode Tape Path Adjustment (2) (7-4) → REV Mode Tape Path Adjustment (7-5) → Video Head Dihedral Adjustment (7-8) → PB RF Amplifier Adjustment

SECTION 5
LINK AND DRIVE SYSTEM ALIGNMENT

5-1. REEL TABLE SYSTEM ADJUSTMENT

5-1-1. Cassette Holder Position Adjustment

Tool: Reel table height check base jig
Thickness gauge
L-shaped hexagonal wrench
(across flat has 1.27 mm)

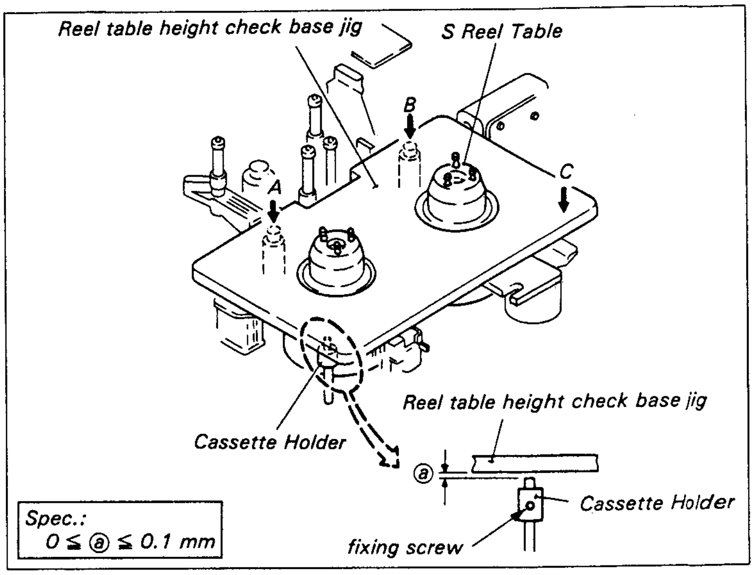
Mode: EJECT completion

Check procedure:

(1) While lightly pushing the Reel Table Height Check Base Jig marked (A), (B) and (C) toward the chassis, check that the clearance between the base jig and the cassette holder meets the required specification.

Adjustment procedure:

(1) Adjust the position of the Cassette Holder to meets the required specification.


Reel table height check base jig
S Reel Table
A
B
C
Cassette Holder
Reel table height check base jig
ⓐ
Cassette Holder
fixing screw

Spec.:
$0 \leq ⓐ \leq 0.1$ mm

5-1-2. Reel Table Height and Vertical Play Adjustment

- The height of the reel table is the reference for the tape threading system and the tape path system. This Adjustment should be performed very carefully.

Tool: Reel table height check base jig
Reel table height check jig
Slide vernier callipers or equivalent

Mode: EJECT completion

Check procedure:

(1) The probes of the Reel Table Height Check Jig marked "SO" and "TO" can slide over the reel table, leaving a clerarnce between the jig and the reel table. The probes marked "SX" and "TX" meet the flange and cannot slide over the reel table.
  - Use the "SO" and "SX" probes for the Supply Reel Table.
  - Use the "TO" and "TX" probes for the Take-up Reel Table.

(2) After tighten the fixing screw of the top of the reel table, push up and press down the reel table. Check that the vertical play meets the required specification.

Adjustment procedure:

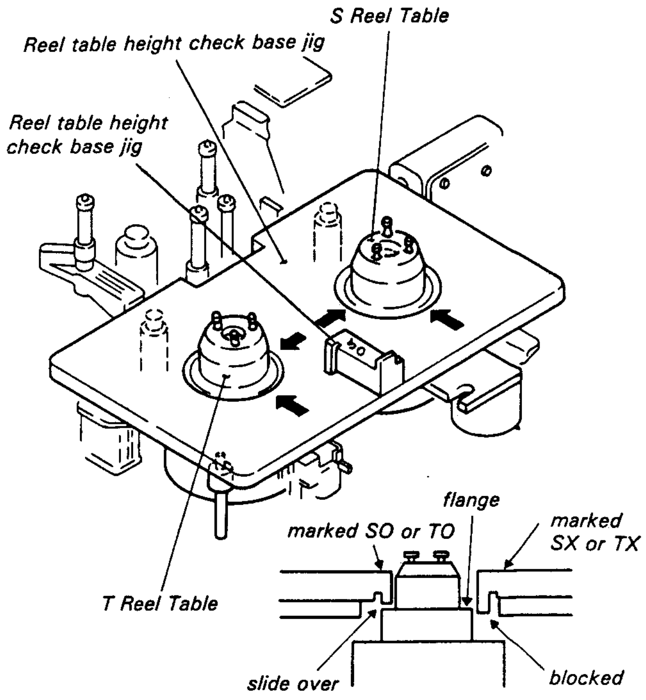
(1) Place the washer under the reel table and adjust the height of the reel table.

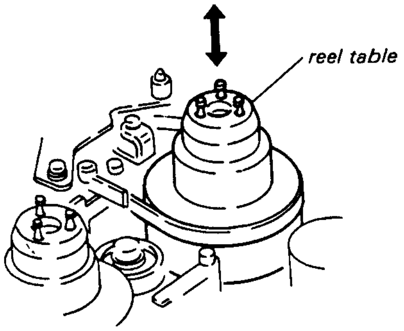
(2) Place the washer on the reel table and adjust the vertical play of the reel table.

NOTE : When the reel table is removed and its height is adjusted with a washer, drop a drop of Sony oil on the reel shaft. (A drop of Sony oil is the amount that is scooped by a 2 mm dia. twing as shown in the figure.)

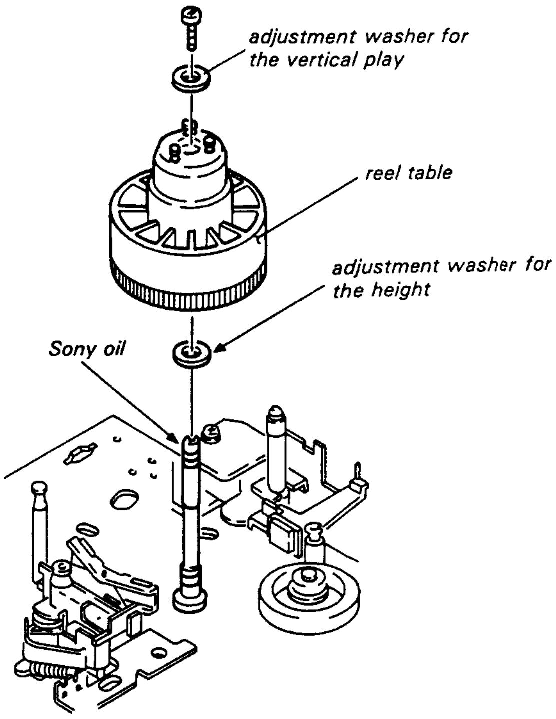
- Adjustment poly-slider washer:

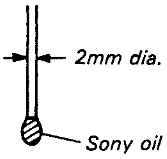
3-645-567-11	6 mm dia.	0.05 mm thick
3-701-444-01	6 mm dia.	0.13 mm thick
3-701-444-11	6 mm dia.	0.25 mm thick
3-701-444-21	6 mm dia.	0.5 mm thick


S Reel Table
Reel table height check base jig
Reel table height check base jig
T Reel Table
flange
marked SO or TO
marked SX or TX
slide over
blocked



Spec.: vertical play
0.17 mm ~ 0.38 mm


adjustment washer for the vertical play
reel table
adjustment washer for the height
Sony oil


2mm dia.
Sony oil

5-2. T DRAWER ARM ADJUSTMENT

5-2-1. T Drawer Arm EJECT Position Adjustment

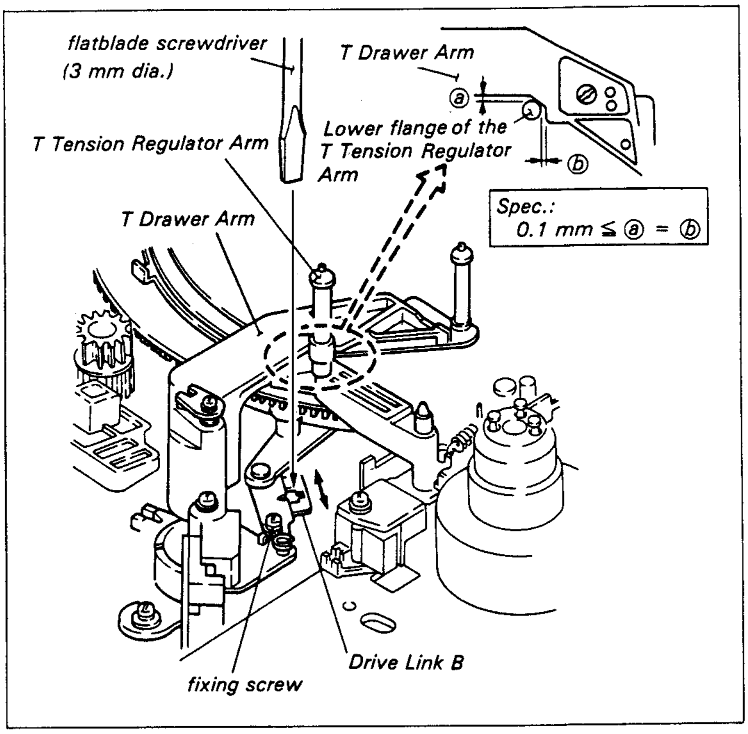
Mode: Put the unit into the FR-STOP mode without a cassette tape. And then put the unit inot the EJECT completion mode.

Check procedure:

(1) Check that the clearance between the lower flange of the T Tension Regulator Arm and the T Drawer Arm meets the required specification.

Adjustment procedure:

(1) Adjust the position of the Drive Link (B) Ass'y with a flatblade screwdriver (3mm dia.) to meets the required specification.


flatblade screwdriver
(3 mm dia.)
T Drawer Arm
ⓐ
Lower flange of the
T Tension Regulator
Arm
ⓑ
T Tension Regulator Arm
T Drawer Arm
Spec.:
0.1 mm ≦ ⓐ = ⓑ
Drive Link B
fixing screw

5-2-2. Unthread-end Switch Position Adjustment

Tool: Black vinyl tape
(1 cm x 1.5 cm)

Preparation:

(1) Put the unit into the FR-STOP mode and turn the power OFF.

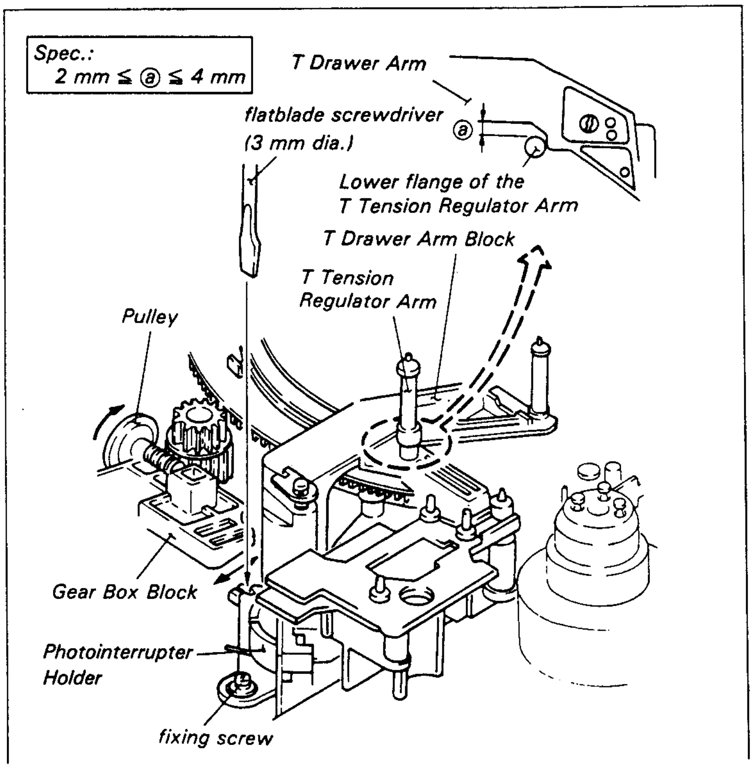
(2) Remove the Pinch Press Lever Spring from the bracket of the FR Detector Block with tweezers.

(3) Remove the FR Detector Block and cover the D2 photointerrupter (FR-UNTHREAD END Detector) with the black vinyl tape. (The FR Detector is put into the FR-STOP mode.)

Check procedure:

(1) Turn the power ON and rotate the pulley of Gear Box Block in the clockwise direction by hand.

(2) When the relationship of the T Drawer Arm and the T Tension Regulator Arm is as shown in the figure, check that the T Solenoid clicks.


Spec.:
2 mm ≦ ⓐ ≦ 4 mm
T Drawer Arm
flatblade screwdriver
(3 mm dia.)
ⓐ
Lower flange of the
T Tension Regulator Arm
T Drawer Arm Block
T Tension
Regulator Arm
Pulley
Gear Box Block
Photointerrupter
Holder
fixing screw

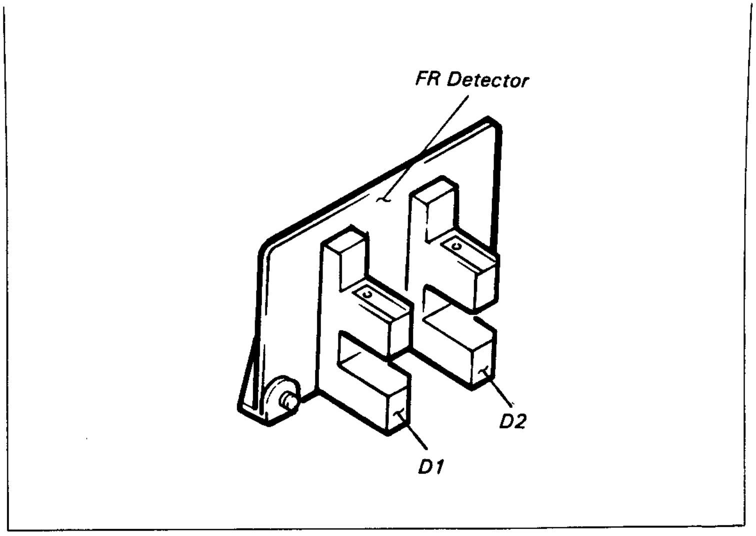
Adjustment procedure:

(1) Adjust the position of the Photointerrupter Holder with a flatblade screwdriver (3mm dia.) to meet the required specification.

(2) Turn the power OFF and install FR Detector Block after peeling off the black vinyl tape.

(3) Perform Section 5-3-4, FR Detector Installing Position Adjustment.

(4) Hook the Pinch Press Lever Spring to the bracket of the FR Detector Block with tweezers.



5-3. THREADING SYSTEM ADJUSTMENT

5-3-1. Threading Ring Rotation Adjustment

- This adjustment is required only when the Threading Ring is replaced or removed.
- If the Threading Ring is adjusted to have a narrower clearance, the ring rotation becomes sluggish. If adjusted to have a wider clearance, tape run during threading, FWD, and REV modes will be unstable.

Mode: Check mode: EJECT completion/Threading/Unthreading

Adjustment mode: EJECT completion

Check procedure:

(1) Put the unit into the EJECT completion mode. Check that the horizontal play meets the required specification when the Thteading Ring is pushed in the direction of the arrow.

(2) Check that the rotation of the Threading Ring during the Threading and Unthreading modes is smooth.

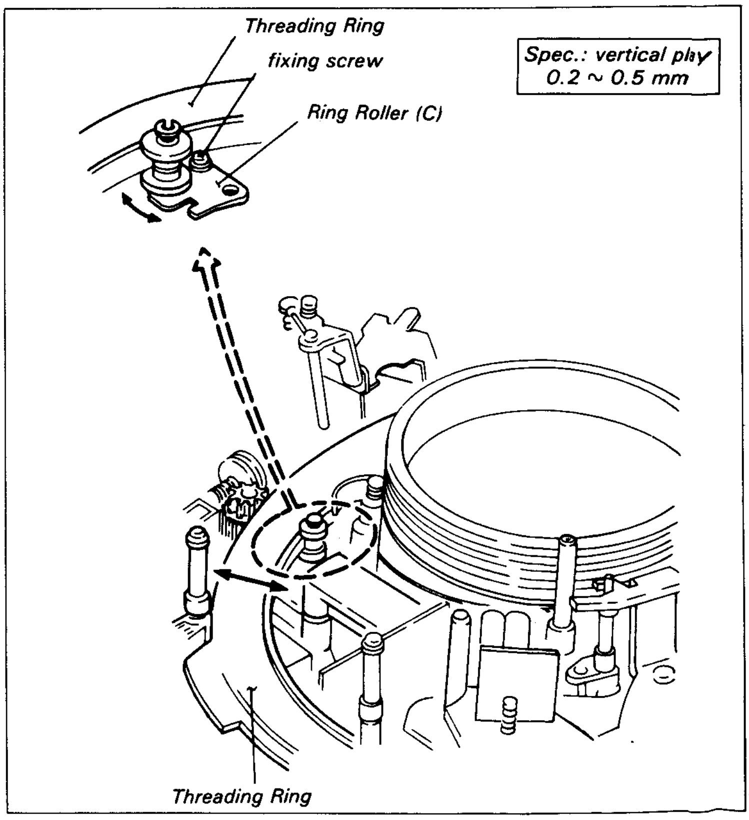
Adjustment procedure:

(1) Put the unit into the EJECT completion mode.

(2) Adjust the position of the Ring Roller (C) to meet the required specification.

Reference:

- Insert a 0.3 mm thick piece of paper between the Threading Ring and the Ring Roller (C).
- Three pages of this service manual are 0.3 mm thick.



5-3-2. Gear Box Installing Position Adjustment

. It is required that Section 5-3-1, Threading Ring Rotation Adjustment is correct before initiating this adjustment.

Mode: Put the unit into the EJECT completion mode. Turn the pulley of the Gear Box 1/2 to 1 turn in the direction of arrow C.

Check procedure:

(1) Put the unit into the EJECT completion mode and then turn the pulley of the Gear Box 1/2 to 1 turn in the direction of arrow C.

(2) Mark two lines on the top surface of the gear with a black felt tip pen. (Two lines are easy to see during the adjustment.)

(3) Turn the pulley in the direction of arrow C or D until one of the lines is roughly parallel to the outer circumference of the Threading Ring.

(4) Check that the relationship between the outer circumference of the Threading Ring and the Gear meets the required specification.

Adjustment procedure:

(1) Open the SY-106(1) Board.

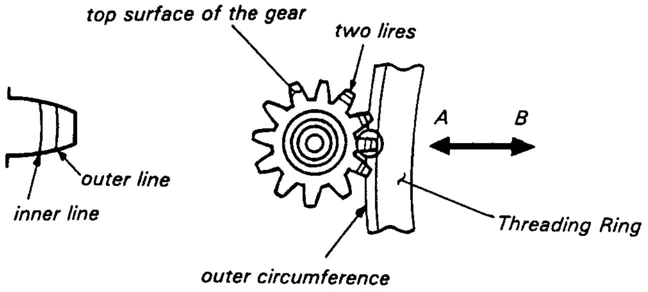
(2) Turn the pulley in the direction of arrow C or D until one of the lines is roughly parallel to the outer circumference of the Threading Ring.

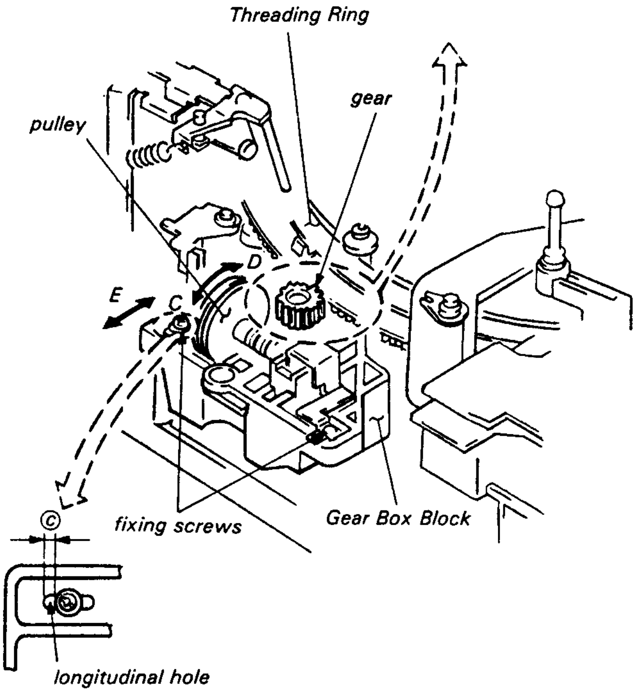
(3) Move the Gear Box in the direction of arrow E to meet the required specification.

(4) Check that Section 6-5-1, Threading Ring Rotation Adjustment meets the required specification.

(5) Check that © meets the required specification at the longitudinal hole of the gear block as shown in the figure.

Spec.:
(1) When pushing the Threading Ring in the direction of arrow A or B, the outer circumference of the Threading Ring is between two lines of the gear.


top surface of the gear
two lires
A
B
outer line
inner line
Threading Ring
outer circumference


Threading Ring
gear
pulley
D
E
C
©
fixing screws
Gear Box Block
longitudinal hole

Spec.:
0.1 mm ≦ © ≦ 1.5 mm

5-3-3. Pinch Roller Self Alignment Adjustment

. If this adjustment is incorrect, the position and the slantness of the Pinch Roller will not be correct when the Pinch Roller is pressed against the Capstan Shaft. Incorrect adjustment will cause a tape to be damaged.

Mode: PLAY mode without a cassette tape

Check procedure:

(1) Put the unit into the PLAY mode without a cassette tape.

(2) Check that the relationship of Pinch Roller Arm (A) and Pinch Roller Arm (B) meets the required specification.

Adjustment procedure:

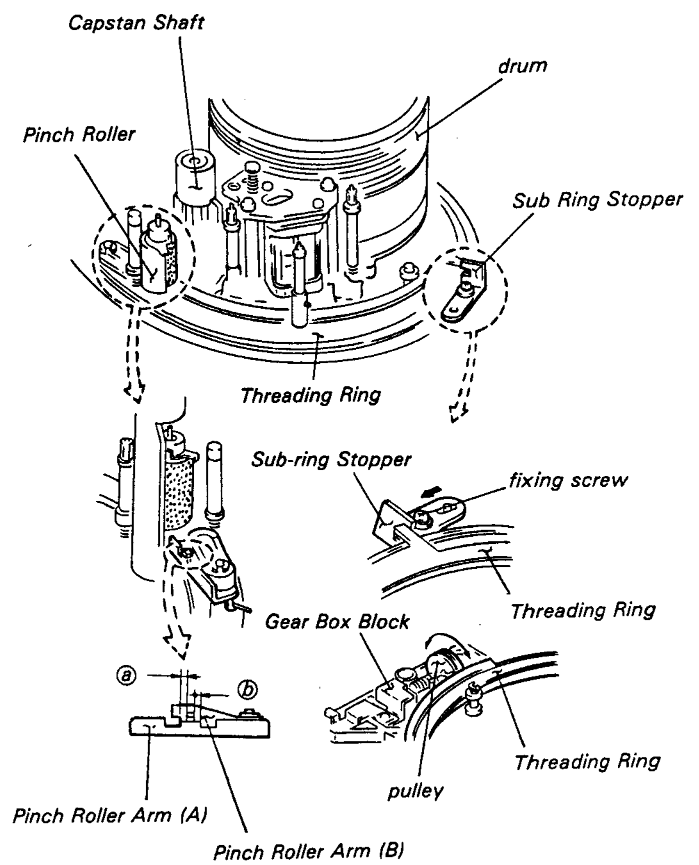
(1) Put the unit into the PLAY mode without a cassette tape.

(2) Loosen the fixing screw in the Sub-ring Stopper.

(3) Turn the pulley of the Gear Box Block in the direction of the arrow to meet the required specification.

(4) Push the Sub-ring Stopper gently in the direction of the arrow and tighten the fixing screw.

(5) Put the unit into the EJECT completion mode and then perfomn the check procedure.


Capstan Shaft
drum
Pinch Roller
Sub Ring Stopper
Threading Ring
Sub-ring Stopper
fixing screw
Threading Ring
Gear Box Block
ⓐ
ⓑ
Threading Ring
pulley
Pinch Roller Arm (A)
Pinch Roller Arm (B)

Spec.:
There are clearances ⓐ and ⓑ.

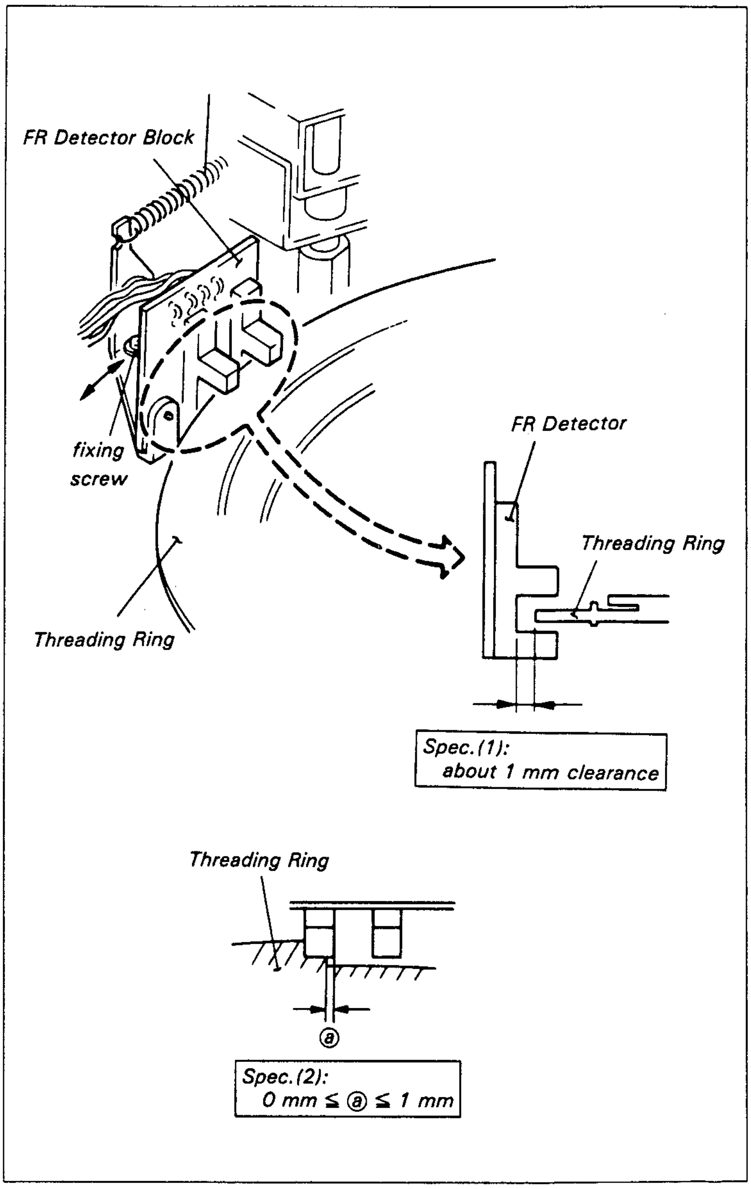
5-3-4. FR Detector Block Installing Position Adjustment

- It is required that the Section 5-3-1, Threading Ring Rotation Adjustment is correct before initiating this adjustment.

Mode: Threading completion mode

Adjustment procedure:

(1) Put the unit into the Threading completion mode and turn the power OFF.
(2) Remove the Pinch Press Lever Spring from the bracket of the FR Detector Block with tweezers.
(3) Loosen the fixing screw of the FR Detector block 1/4 to 1/2 turn.
(4) Press the FR Detector Block against the Threading Ring, and reverse it about 1mm. (Do not reverse it more than 1.5mm) (Spec.1)
(5) Move the FR Detector Block in the direction of the arrow to meet the required specification 2.
(6) Check that the clearance meets the required specification 1.
(7) Hook the Pinch Press Lever Spring to the bracket of the FR Detector Block with tweezers.


FR Detector Block
fixing screw
Threading Ring
FR Detector
Threading Ring
Spec.(1): about 1 mm clearance
Threading Ring
ⓐ
Spec.(2): 0 mm ≦ ⓐ ≦ 1 mm

5-4. PINCH LEVER BLOCK ADJUSTMENT

5-4-1. Pinch Lever Preset Adjustment

- It is required that Section 5-3-1, Threading Ring Rotation Adjustment and Section 6-3-3, Pinch Roller Self Alignment Adjustment are correct before initiating this adjustment.

Mode: Turn the power OFF in the PLAY mode

Check procedure:

(1) Put the unit into the PLAY mode and turn the power OFF. Check that the position of the Pinch Solenoid Pin meets the required specification.

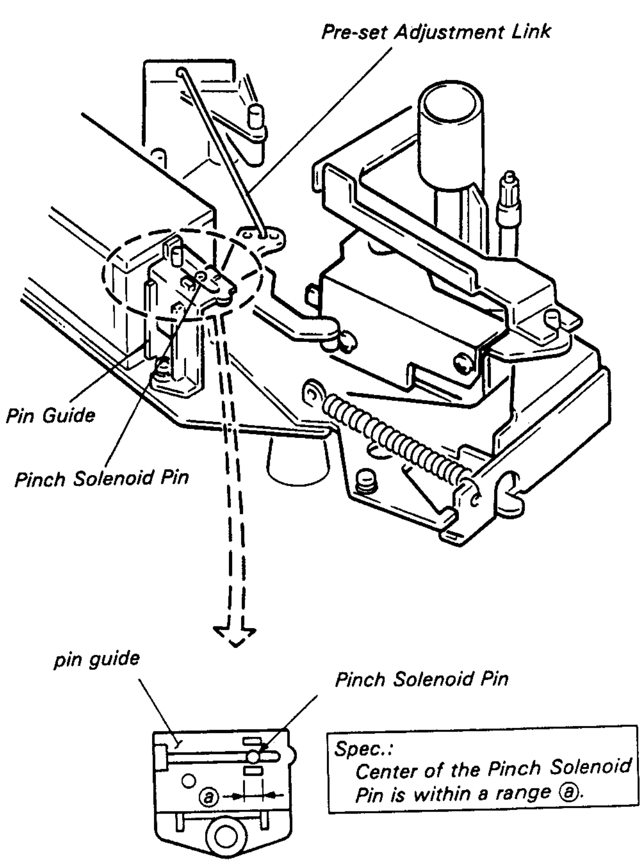
(2) Turn the power ON and press the PLAY button. After unthreading is complete, check as described in step (1).

Adjustment procedure:

(1) Adjust the position of the Pinch Solenoid to meet the required specification, refering to Section 5-7-4, Pinch Solenoid Installing Position Adjustment.

(2) If the specification in Step (1) cannot be obtained, adjust the position of the Sub-ring Stopper to meet the required specification, refering to Section 5-3-3, Pinch Roller Self Alignment Adjustment.

(3) If the specification in Steps (1) and (2) cannot be obtained, insert the Pinch Lever Preset Adjustment Link into the appropriate hole of the Preset Lever Ass'y to meet the required specification. Perform Steps (1) and (2) again.



Spec.:
Center of the Pinch Solenoid Pin is within a range ⓐ.

5-4-2. Pinch Roller Preset Adjustment

It is required that Section 5-3-1, Threading Ring Rotation Adjustment and Section 5-3-3, Pinch Roller Self Alignment Adjustment are correct before initiating this adjustment.

Tool: Thickness gauge

Mode: PLAY mode

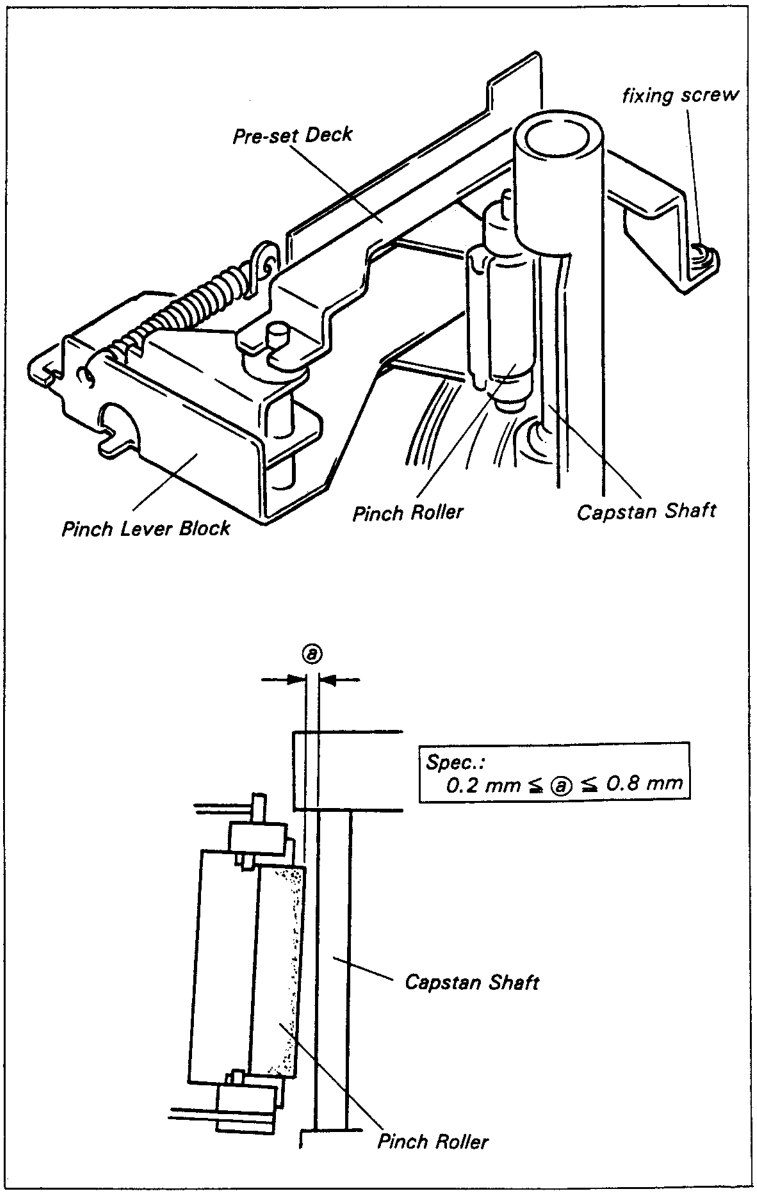
Check procedure:

(1) Check that the clearance between the Pinch Roller and Capstan Shaft meets the required specification.

Adjustment procedure:

(1) Adjust the position of the Pre-set Deck to meet the required specification.

(2) Repeat the Threadihg/Unthreading modes two or three times and check that it meet the required specification.


fixing screw
Pre-set Deck
Pinch Lever Block
Pinch Roller
Capstan Shaft
ⓐ
Spec.:
0.2 mm ≦ ⓐ ≦ 0.8 mm
Capstan Shaft
Pinch Roller

5-4-3. Pinch Solenoid Block Position Adjustment

Tool: Thickness gauge

Mode: PLAY mode with a cassette tape

Check procedure:

(1) Insert a cassette tape and put the unit into the PLAY mode.

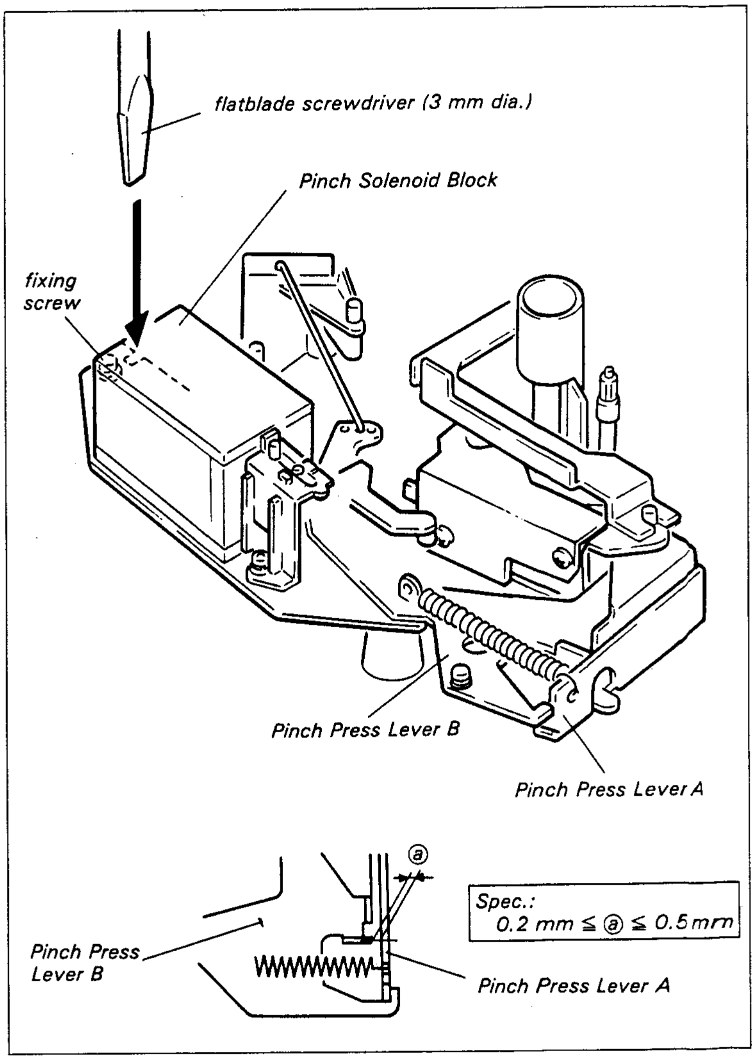
(2) Check that the clearance between Pinch Press Lever A and B meets the required specification.

(3) Repeat the Unthreading/Threading modes two or three times and check as described in step (2).

Adjustment procedure:

(1) Put the unit into the PLAY mode. Adjust the position of the Pinch Solenoid Block with a flatblade screwdriver (3 mm dia.) to meet the required specification.

(2) Perfom the check procedures (2) and (3).


flatblade screwdriver (3 mm dia.)
Pinch Solenoid Block
fixing screw
Pinch Press Lever B
Pinch Press Lever A
ⓐ
Pinch Press Lever B
Pinch Press Lever A

Spec.: 0.2 mm ≦ ⓐ ≦ 0.5 mm

5-5. T TAPE SENSOR POSITION ADJUSTMENT

- There are two adjustments in this section. The first is the height adjustment and the second is the adjustment of the clearance between the tape and LED.

Tool: Thickness gauge

Mode: PLAY and FR STOP modes with a cassette tape

Check procedure:

(1) Inset the cassette tape and put the unit into the FR STOP mode. Push the tape by hand as shown in the figure. Check that the clearance between top edge of the tape and bottom side of the T Photo Holder Block (black plastic) meets the required specification. (Spec. (1))

(2) Put the unit into the PLAY mode.

(3) As viewed from the top of the unit, check that the ※※ of the T Tape Sensor Block is above the upper flange of the T Drawer Arm (within the range "A"). (Spec. (2))

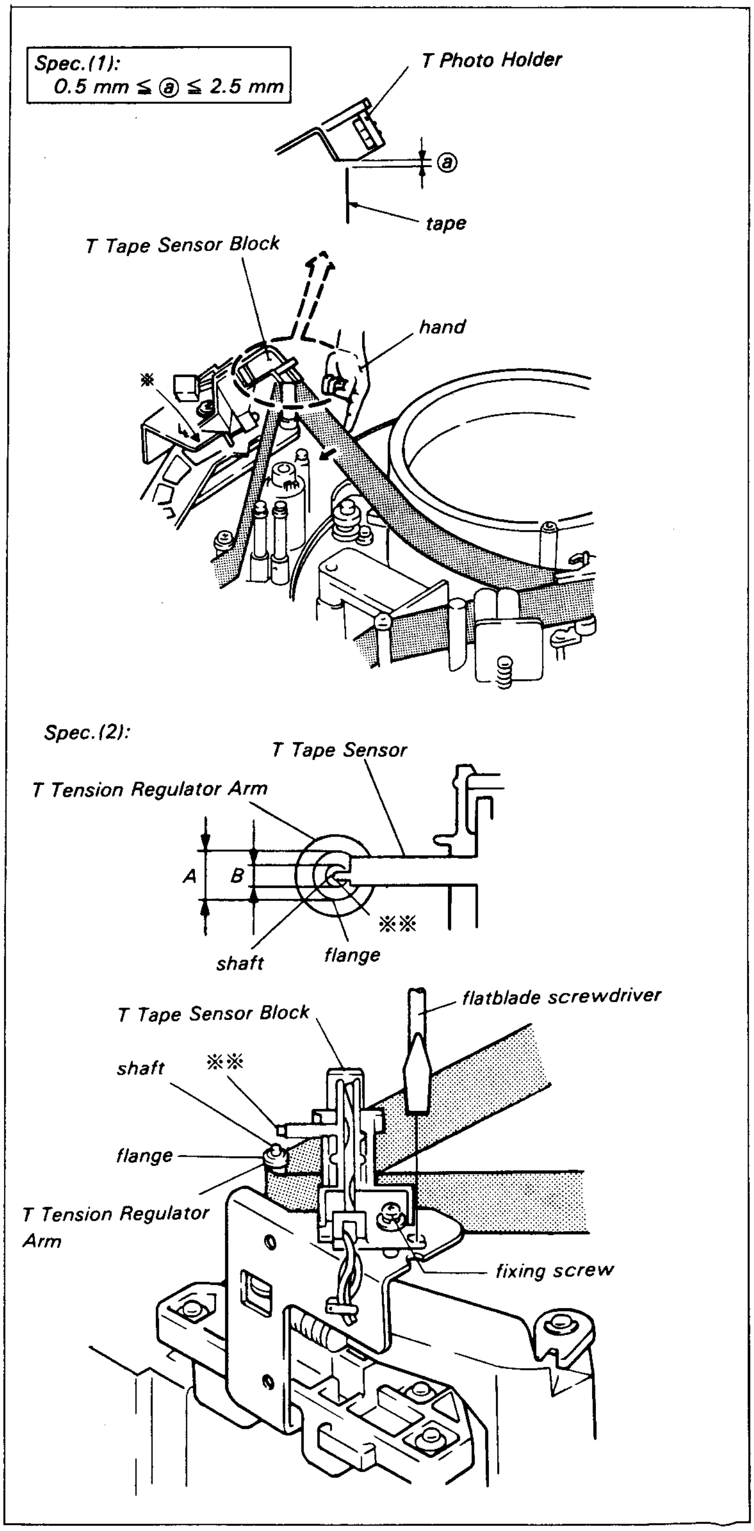
Adjustment procedure:

(1) Bend the ※ with a pliers to meet the required specification (1). Perfom check procedures (2) and (3).

(2) Loosen the fixing screw of the T Tape Sensor Block 1/2 to 1 turn.

(3) As viewed from the top of the unit in the PLAY mode, adjust the position of the T Tape Sensor Block with a flatblade screwdriver so that the ※ ※ of the T Tape Sensor Block is above the shaft of the T Drawer Arm (within the range "B").

(4) Check that it meets the required specification (1).


Spec.(1):
0.5 mm ≦ ⓐ ≦ 2.5 mm
T Photo Holder
ⓐ
tape
T Tape Sensor Block
hand
※
Spec.(2):
T Tape Sensor
T Tension Regulator Arm
A
B
※※
shaft
flange
T Tape Sensor Block
flatblade screwdriver
shaft
※※
flange
T Tension Regulator Arm
fixing screw

5-6. TENSION ARM SYSTEM ADJUSTMENT

5-6-1. S Drawer Roller Block Limiter Adjustment

Mode: FR-STOP mode

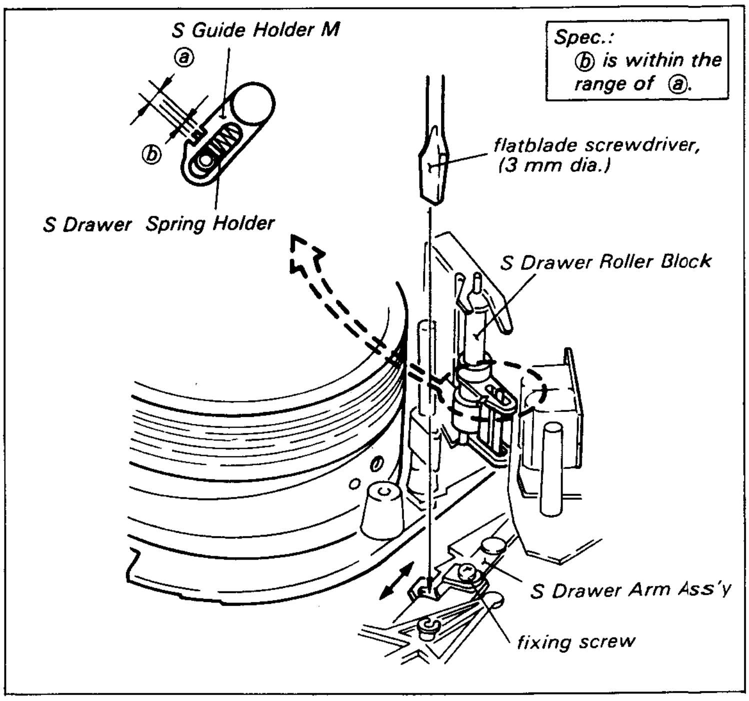
Check procedure:

(1) Check that " b " of the S Drawer Spring Holder in the S Drawer Roller Block fits into notch " a " of the S Guide Holder M.

Adjustment procedure:

(1) Loosen the fixing screw of the S Drawer Arm Ass'y 1/4 to 1/2 turn.

(2) Adjust the position of the S Drawer Arm Ass'y with a flatblade screwdriver (3 mm dia.) to meet the required specification.


S Guide Holder M
ⓐ
ⓑ
S Drawer Spring Holder
Spec.:
ⓑ is within the range of ⓐ.
flatblade screwdriver, (3 mm dia.)
S Drawer Roller Block
S Drawer Arm Ass'y
fixing screw

5-6-2. T Tension Regulator Operatiing Position Adjustment

Mode: FR-STOP mode

Tool: Thickness gauge

Check procedure:

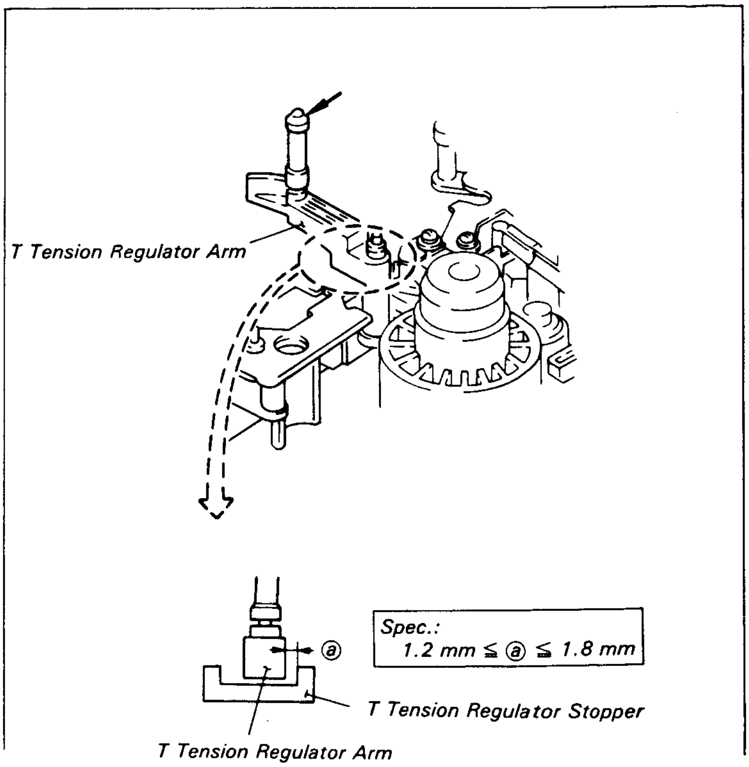
(1) Push the T Tension Regulator Arm in the direction of the arrow and remove the finger gently.

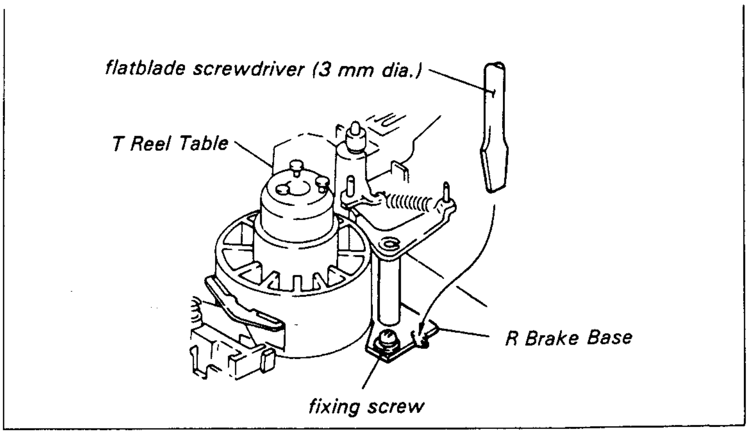
(2) Check that the clearance between the T Tension Regulator Arm and the stopper meets the required specification.

Adjustment procedure:

(1) Loosen the fixing screw of the R Brake Base 1/4 to 1/2 turn.

(2) Adjust the position of the R Brake Base with a flatblade screwdriver (3mm dia.) to meet the required specification.


T Tension Regulator Arm
ⓐ
Spec.:
1.2 mm ≦ ⓐ ≦ 1.8 mm
T Tension Regulator Stopper
T Tension Regulator Arm


flatblade screwdriver (3 mm dia.)
T Reel Table
R Brake Base
fixing screw

5-6-3. S Tension Regulator Operating Position Adjustment

Mode: FF mode

Check procedure:

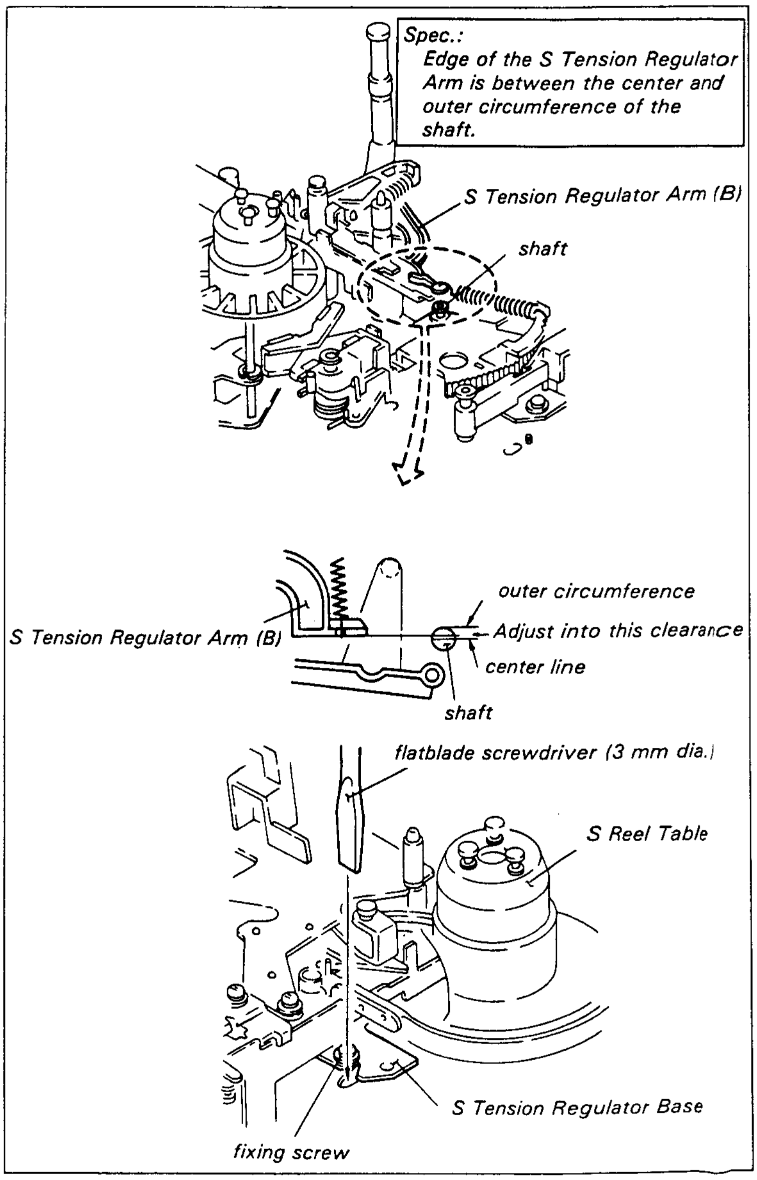
(1) Put the unit into the FF mode without a cassette tape.

(2) Check that the edge of the S Tension Regulator Arm (B) meets the required specification.

Adjustment procedure:

(1) Loosen the fixing screw of the S Tension Regurator Base 1/4 to 1/2 turn.

(2) Adjust the position of the S Tension Regulator Base to meet the required specification.


Spec.:
Edge of the S Tension Regulator Arm is between the center and outer circumference of the shaft.

S Tension Regulator Arm (B)
shaft
outer circumference
S Tension Regulator Arm (B)
Adjust into this clearance
center line
shaft
flatblade screwdriver (3 mm dia.)
S Reel Table
S Tension Regulator Base
fixing screw

5-6-4. Tension Detector Position Adjustment

Tool: DC voltmeter

Mode: FWD / REV mode

Preparation:

(1) Connect the dc voltmeter to TP1 on the SY-106(1) Board.

Check procedure:

(1) Put the unit into the FWD mode without a cassette tape.

(2) Push the T Tension Regulator Arm to the right with a hand as far as it will go. Check that the dc voltage is more than 8V.

(3) Push the T Tension Regulator Arm to the left with a hand as far as it will go. Check that the dc voltage is less than 2.5V.

(4) Put the unit inti the REV mode.

(5) Push the S Tension Regulator to the right with a hand as far as it will go. Check that the dc voltage is less than 2.5 V.

(6) Push the S Tension Regulator to the left with a hand as for as it will go. Check that the dc voltage is more than 8 V.

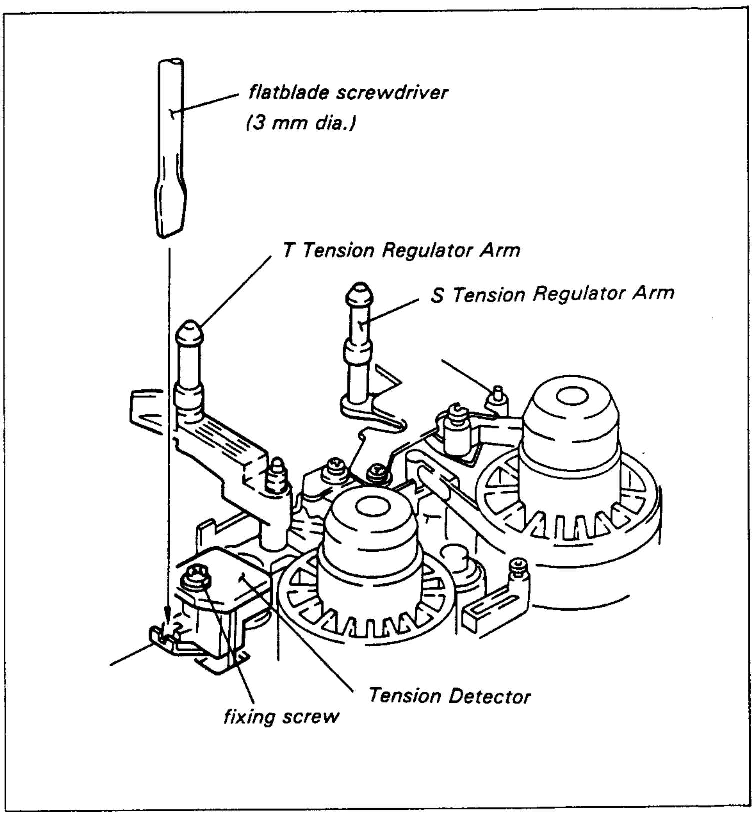
Adjustment procidure:

(1) Remove the FR Detector Block from the unit.

(2) Loosen the fixing screw of the Tension Dtetctor 1/4 to 1/2 turn.

(3) Insert a flatblade screwdriver (3 mm dia) in the notch and adjust the position of the Tension Detector to meet the required specification.

(4) After adjustment, install the FR Detector.



5-6-5. T Tension Regulator Arm Height Adjustment

Tool: L-shaped hexagonal wrench
(across flat has 1.5 mm)

Mode: PLAY / F FWD mode with a cassette tape

Check procedure:

(1) Insert a cassette tape and put the unit into the PLAY mode.

(2) Check that the tape runs in the middle of the tape guide in the cassette.

(3) Check that the tape runs in the middle of the T Tension Detector Guide.

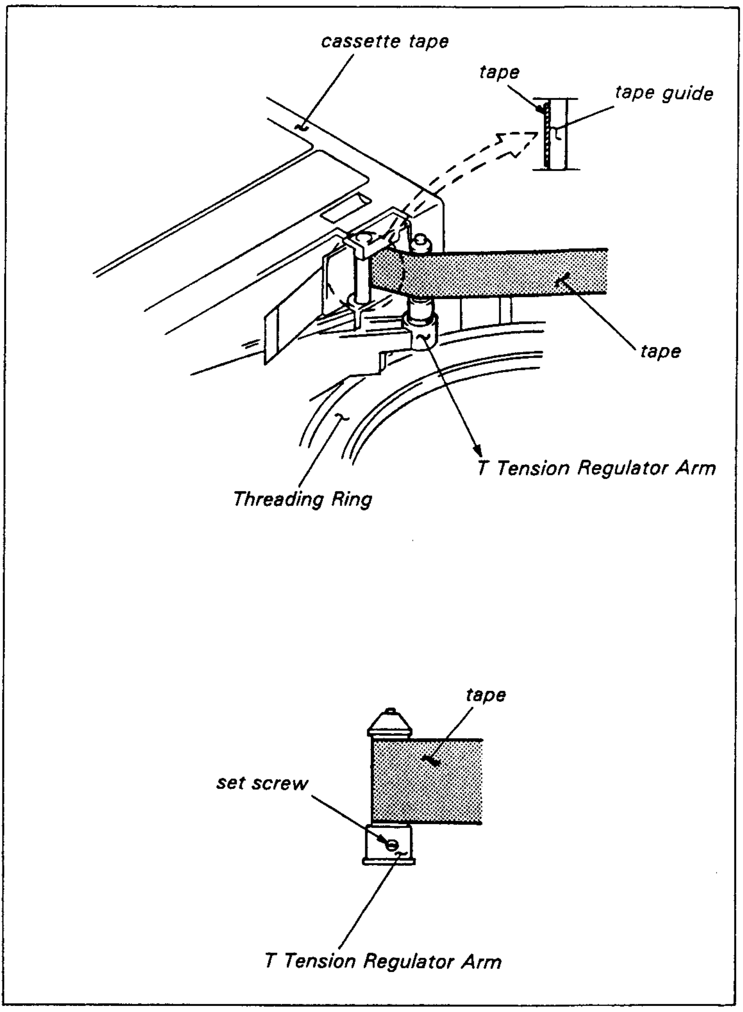
(4) Put the unit into the F FWD mode.

(5) Check as described in steps (2) and (3).

Adjustment procedure:

(1) Loosen the set screw at the lower flange of the T Tension Regulator Arm.

(2) Adjust the height of the T Tension Regulator Arm to meet the required specification.


cassette tape
tape
tape guide
tape
T Tension Regulator Arm
Threading Ring
tape
set screw
T Tension Regulator Arm

5-7. SEARCH SOLENOID SYSTEM ADJUSTMENT

5-7-1. Search Solenoid Installing Position Adjustment

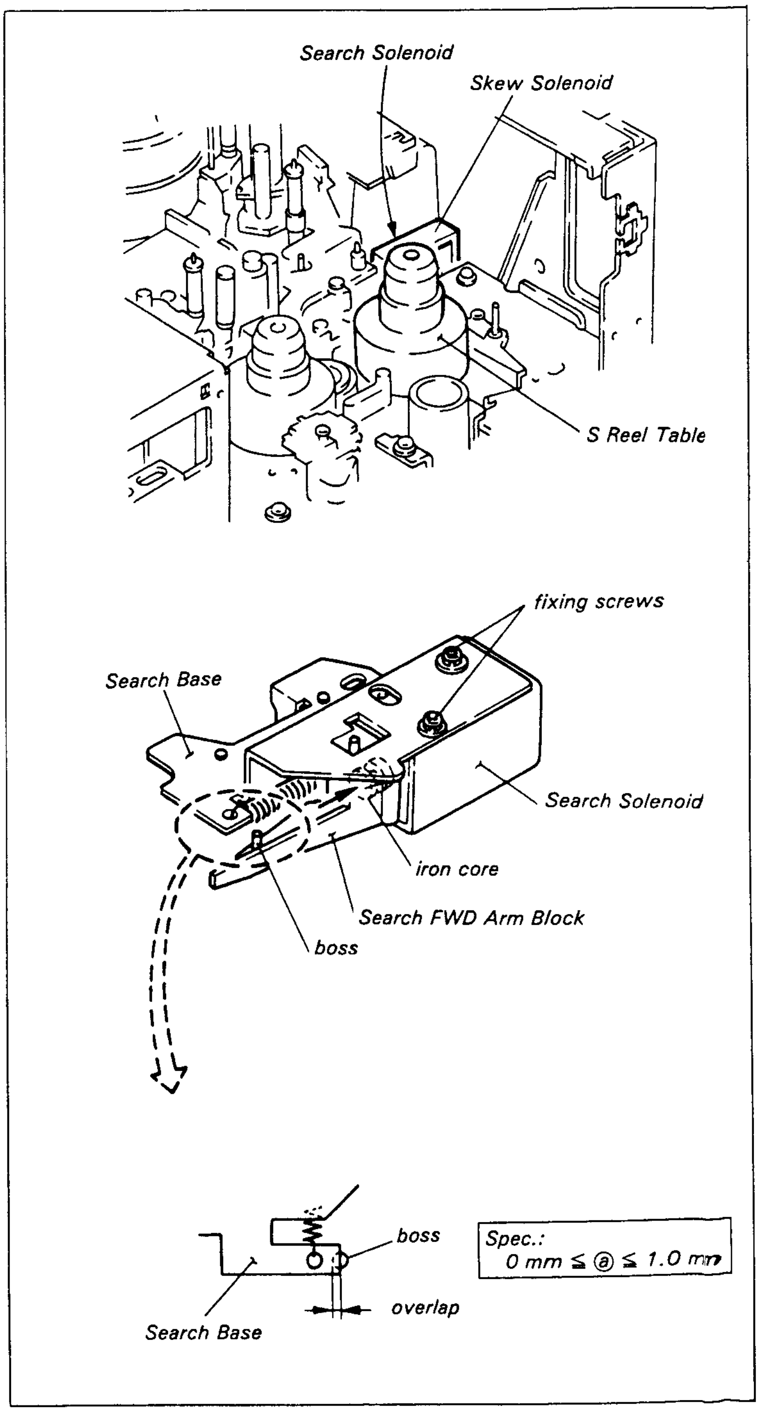
. This adjusment is required only when the search solenoid is replaced or removed.

Preparation:

(1) Remove the Search Solenoid Block from the chassis.

Adjustment procedure:

(1) Move the iron core into the fully energized position (as far as it will go in the direction of the arrow). Adjust the position of the Search Solenoid so that the overlap of the Search FWD Arm Boss and the Search Base meets the required specification.


Search Solenoid
Skew Solenoid
S Reel Table
fixing screws
Search Base
Search Solenoid
iron core
Search FWD Arm Block
boss
boss
Search Base
overlap
Spec.:
0 mm ≦ ⓐ ≦ 1.0 mm

5-7-2. T Idler Solenoid Position Adjustment

- This adjustment is performed when T Idler Solenoid is replaced or removed, and the F FWD Torque does not meet the required specification.

Mode: F.FWD mode without a cassette tape

Adjustment procedure:

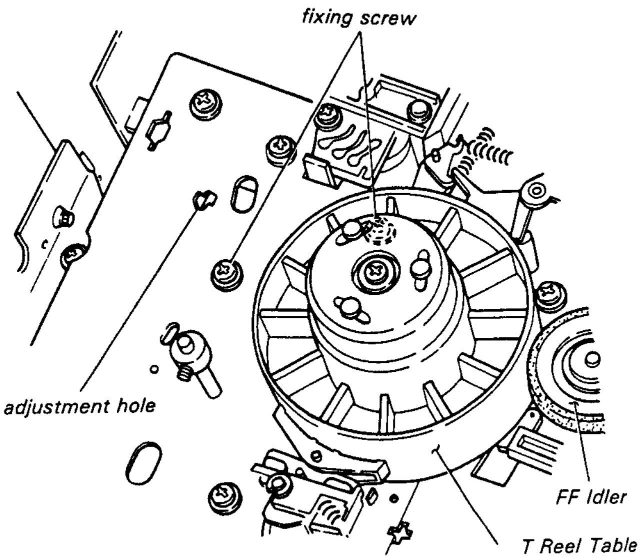
(1) Put the unit into the F FWD mode without a cassette tape.

(2) Loosen the fixing screws of the T Idler Solenoid about 1/2 turn.

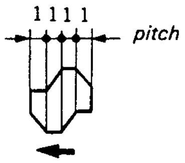
(3) Adjust the position of the T Idler Solenoid until the clearance between the T Reel Table and FF Idler become 0.01 to 0.1 mm.

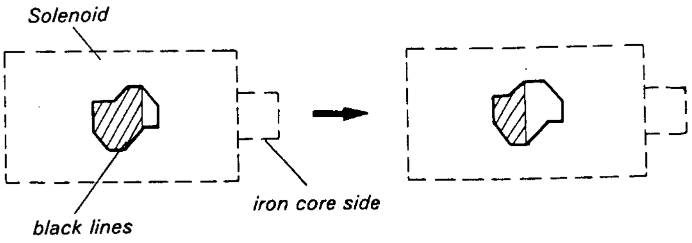
(4) Note the adjustment hole and check that the black line of the solenoid is in this hole.

(5) Move the Solenoid in the direction of the arrow only one pitch from the position of step (4). Tighten the fixing screws.


fixing screw
adjustment hole
FF Idler
T Reel Table

<one pitch>




Solenoid
iron core side
black lines

5-7-3. S Idler Solenoid Position Adjustment

- This adjustment is required only when the S Idler Solenoid is replaced or removed, and the REW Torque does not meet the required specification.

Mode: REW mode without a cassette tape

Adjustment procedure:

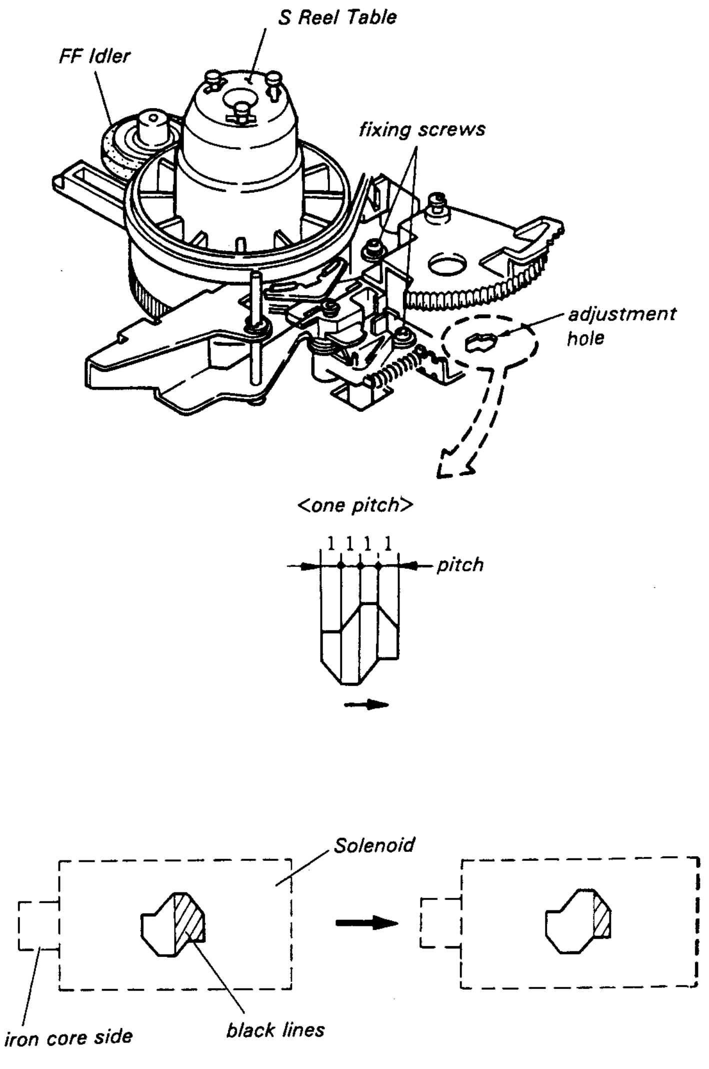
(1) Put the unit into the REW mode without a cassette tape.

(2) Loosen the fixing screws of the S Idler Solenoid about 1/2 turn.

(3) Adjust the position of the S Idler Solenoid until the clerance between the S Reel Table and FF Idler become 0.01 to 0.1 mm.

(4) Note the adjustment hole and check that the black line of the solenoid is in this hole.

(5) Move the Solenoid in the direction of the arrow only one pitch from the position of step (4). Tighten the fixing screws.


S Reel Table
FF Idler
fixing screws
adjustment hole
<one pitch>
1 1 1 1
pitch
Solenoid
iron core side
black lines

5-7-4. Pinch Solenoid Installing Position Adjustment

. This adjustment is required only when the Pinch Solenoid is replaced or removed.

Mode: PLAY mode with a cassette tape

Check procedure:

(1) Insert a cassette tape and put the unit into the PLAY mode.

(2) Check that the outer circumference of the Solenoid Pin meets the required specification.

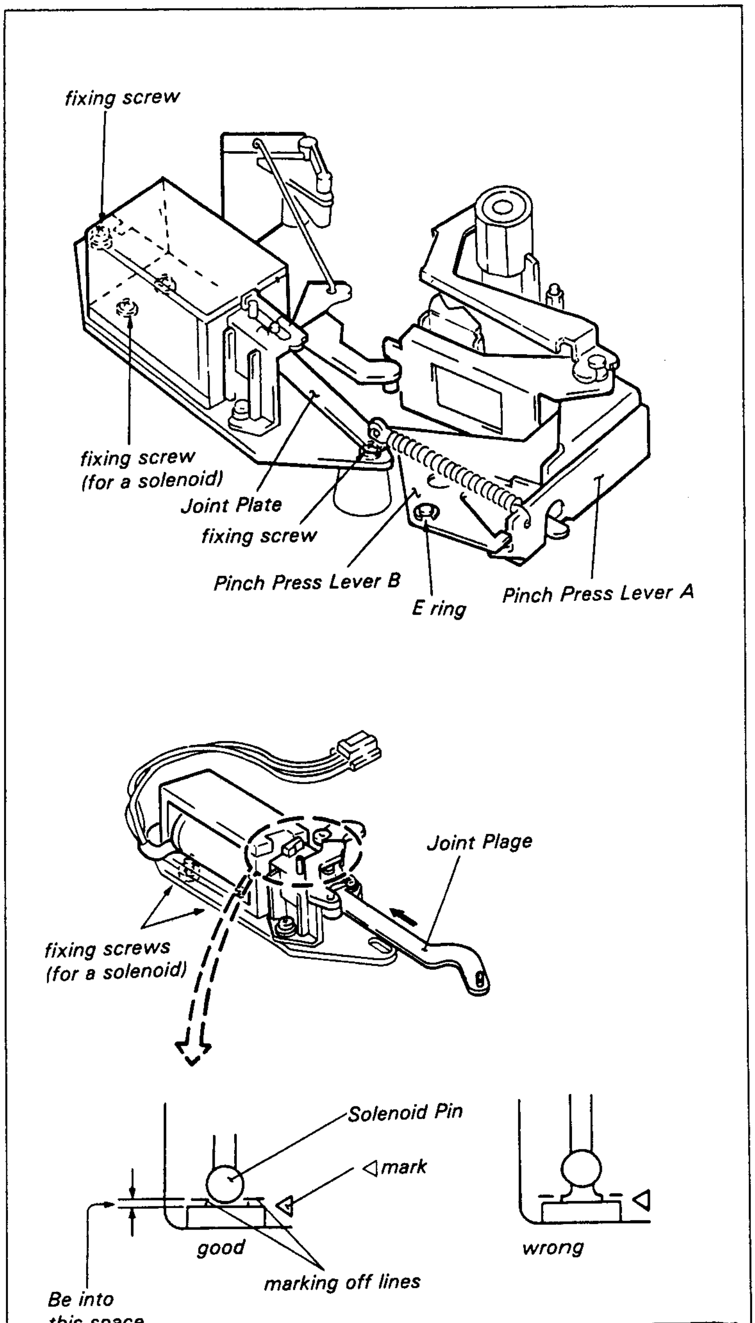
Adjustment procedure:

(1) Remove the E ring and the Joint Lever from the Pinch Press Lever B.

(2) Remove the Pinch Solenoid Block from the chassis after removing the two fixing screws.

(3) Move the Joint Lever to the fully energized position (as far as it will go in the direction of the arrow). Adjust the position of the solenoid so that the outer circumference of the Solenoid Pin to meet the required specification.

(4) Install the Pinch Solenoid Block on the unit. Perfom the check procedure.


fixing screw
fixing screw
(for a solenoid)
Joint Plate
fixing screw
Pinch Press Lever B
E ring
Pinch Press Lever A
Joint Plage
fixing screws
(for a solenoid)
Solenoid Pin
◁mark
good
wrong
marking off lines
Be into
this space.

Spec.:
Outer circumference of Solenoid Pin is between △ mark and marking off lines.

5-7-5. T Brake Solenoid Position Adjustment

Tool: Eccentric screwdriver (6 φ)

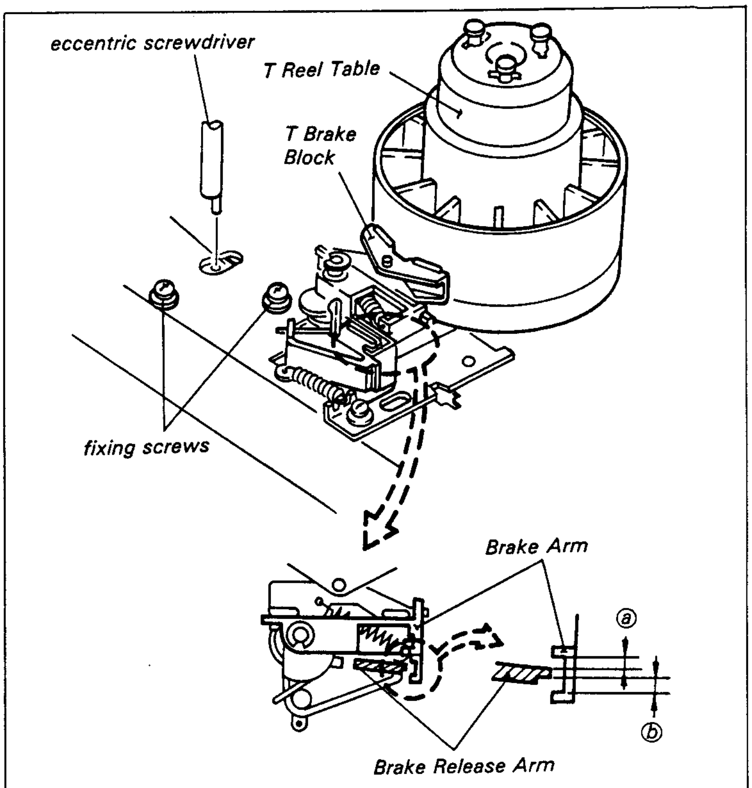
Mode: PLAY mode without a cassette tape

Check procedure:

(1) Check that the relationship between the Brake Release Arm and the Brake Arm meets the required specification.

Adjustment procedure:

(1) Adjust the position of the T Brake Solenoid with an eccentric screwdriver to meet the required specification.


eccentric screwdriver
T Reel Table
T Brake Block
fixing screws
Brake Arm
ⓐ
ⓑ
Brake Release Arm

Spec.:
There are clearances ⓐ and ⓑ.

5-7-6. S Brake Solenoid Position Adjustment

Tool: Eccentric screwdriver (6 φ)

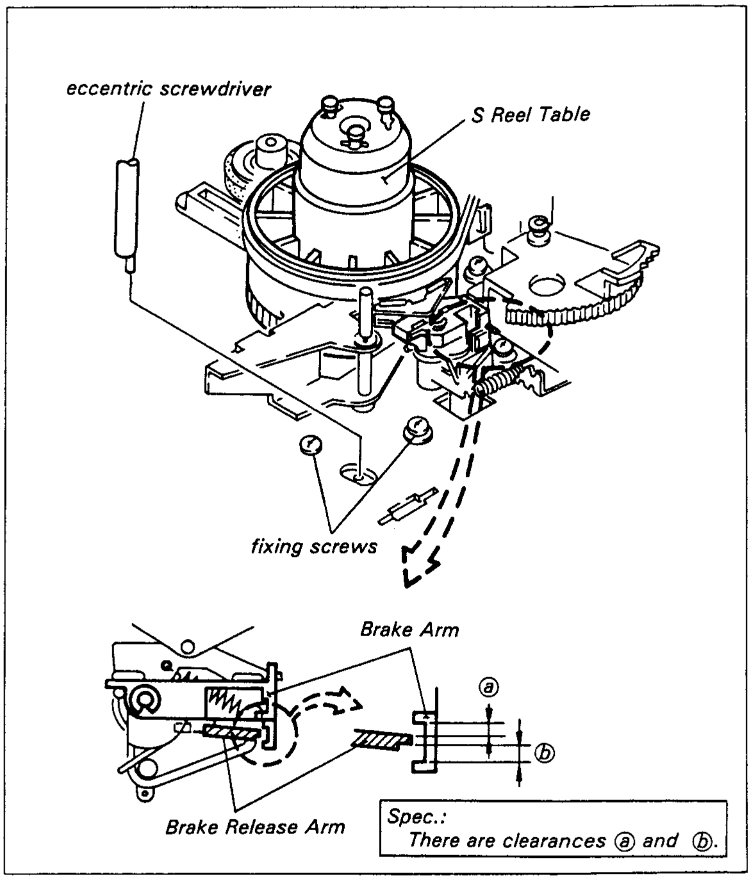
Mode: PLAY mode without a cassette tape

Check procedure:

(1) Check that the relationship between the Brake Release Arm and the Brake Arm meets the required specification.

Adjustment procedure:

(1) Adjust the position of the S Brake Solenoid with an eccentric screwdriver to meet the required specification.


eccentric screwdriver
S Reel Table
fixing screws
Brake Arm
ⓐ
ⓑ
Brake Release Arm

Spec.:
There are clearances ⓐ and ⓑ.

5-7-7. Skew Solenoid Position Adjustment

Mode: EJECT completion mode

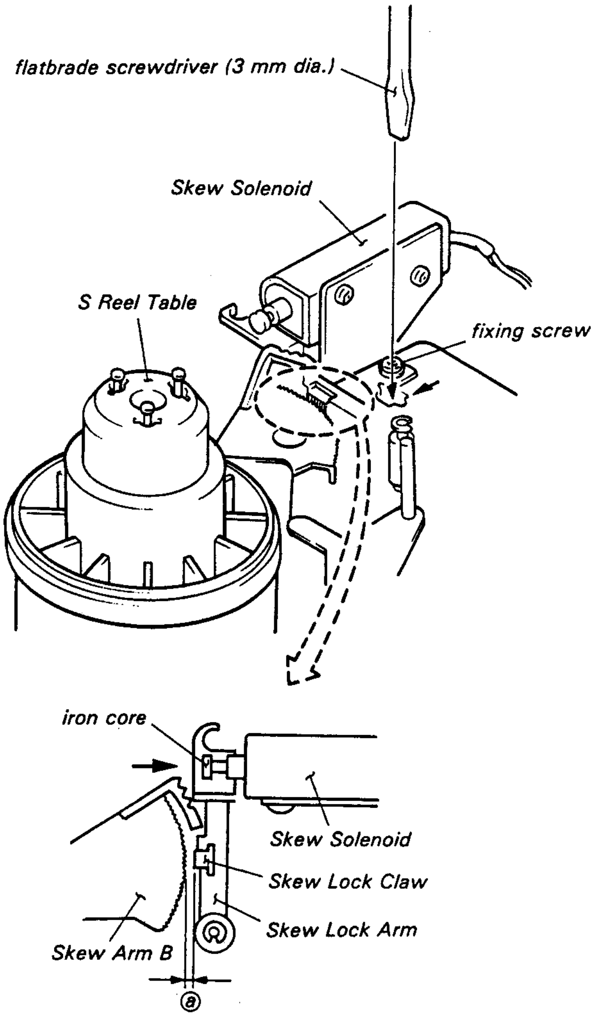
Check procedure:

(1) When pushed the iron core in the direction of the arrow, check that the clearance between the Skew Lock claw and Skew Arm B meets the required specification.

Adjustment procedure:

(1) Loosen the fixing screw of the Skew Solenoid Block 1/4 to 1/2 turn.

(2) Adjust the position of the Skew Solenoid with a flatblade screwdriver (3 mm dia.) to meet the required specification.


flatbrade screwdriver (3 mm dia.)
Skew Solenoid
S Reel Table
fixing screw
iron core
Skew Solenoid
Skew Lock Claw
Skew Lock Arm
Skew Arm B
ⓐ

Spec.:
0.2 mm ≦ ⓐ ≦ 0.5 mm

5-8. CASSETTE-UP COMPARTMENT ADJUSTMENT

- The Cassette-up Compartment has two photo-electric switches. The ON/OFF timing of these switches is adjusted in this procedures.
- Remove the Cassette-up Compartment from the unit for this adjustment.

5-8-1. Cassette-in Switch Position Adjustment

Tool: Circuit tester
Thickness gauge

Preparation:

(1) Connect jumpers from the harness plug for the Cassette-up Compartment to terminals on the CC-31 Board as follows:

plug of harness (CN1)	terminal on CC-31 Board
pin 4 (5V)◄	►pin 4/CN401
pin 5 or 2 (GND)◄	►pin 5 or 2/CN401

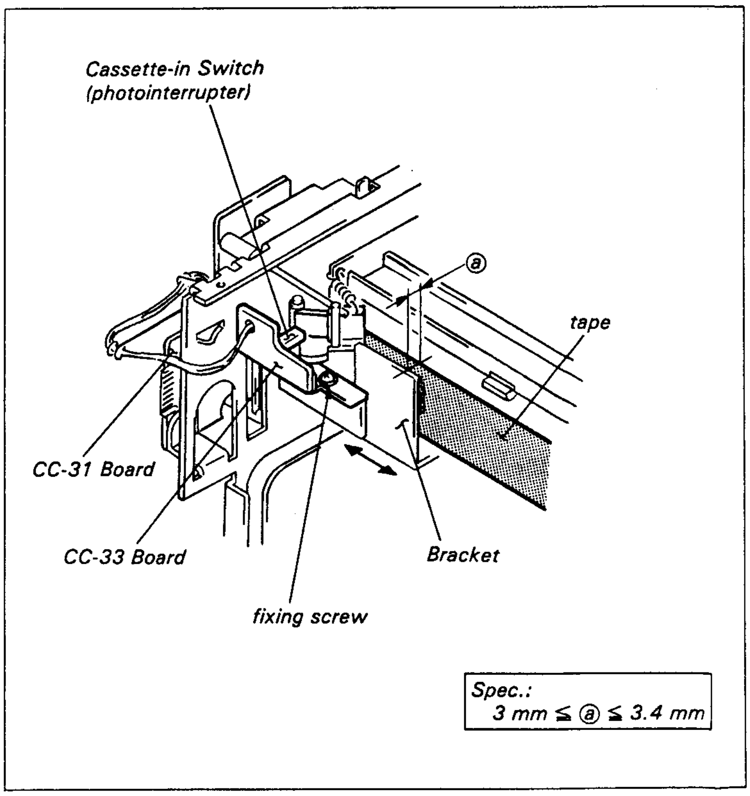
(2) Turn the power ON.

Check procedure:

(1) Connect the circuit tester to pin 1 (H; CASSETTE IN) of CN401 on the CC-31 Board.

(2) Slowly insert a KCA-60 type cassette tape.

(3) When the circuit tester indicates "H" (about 5V), check that the clearance between the front side of the cassette tape and the bracket of the Cassette- up Compartment meets the required specification.



Spec.: 3 mm ≦ ⓐ ≦ 3.4 mm

Adjustment procedure:

(1) Move the Cassette-in Switch in the direction of the arrow to meet the required specification.

- Reference:
  Insert a 3.3 mm thickness gauge between the cassette tape and the bracket. Adjust the position of the Cassette-in Switch until the circuit tester indicates to "H".

5-8-2. Cassette-down Switch Position Adjustment

Tool: Circuit tester

Preparation:

(1) Connect jumpers from the harness plug of the Cassette-up Compartment to terminal on the CC-31 Board as follows:

plug of harness (CN1)	terminal on CC-31 Board
pin 4 (5V)◄	►pin 4/CN401
pin 5 or 2 (GND)◄	►pin 5 of 2/CN401

(2) Turn the power ON.

Check procedure:

(1) Connect the circuit tester to pin 3 (H; CASSETTE DOWN) of CN401 on the CC-31 Board.

(2) Insert a KCA-60 type cassette tape and turn the white gear slowly in the direction of the arrow.

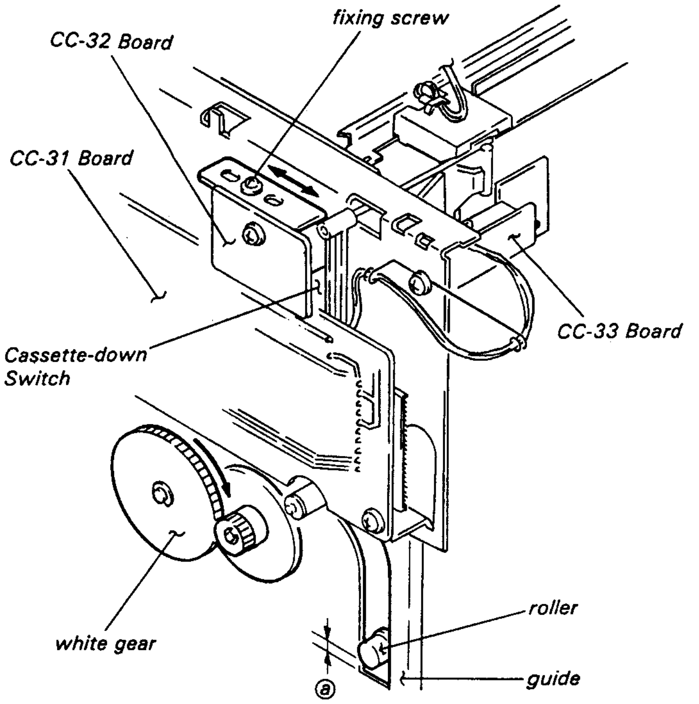
(3) When the circuit tester indicates "H", check that the clearance between the roller and the guide meets the required specification.

Adjustment procedure:

(1) Move the Cassette-down switch in the direction of the arrow to meet the required specification.

- Reference:

  Turn the white gear on the right side until the clearance between the roller and the guide is 2.2 mm. Adjust the position of the Cassette-down Switch so that the circuit tester indicates "H" in this position.



Spec.:
2 mm ≤ ⓐ ≤ 3 mm

5-9. LEAF SPRING POSITION ADJUSTMENT

Check procedure:

(1) Put the unit into the PLAY mode without a cassette tape and then put the unit into the EJECT mode.

(2) Turn the Gear Box Pulley by hand so that the edge of the T Drawer Arm is at the center of the shaft as shown in the figure.

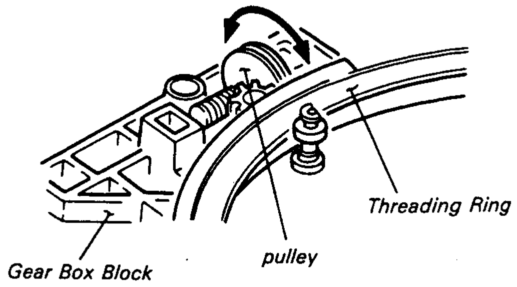
(3) Check that the clearance between the Leaf Spring and the Pinch Roller Shaft meets the required specificaiton (1).

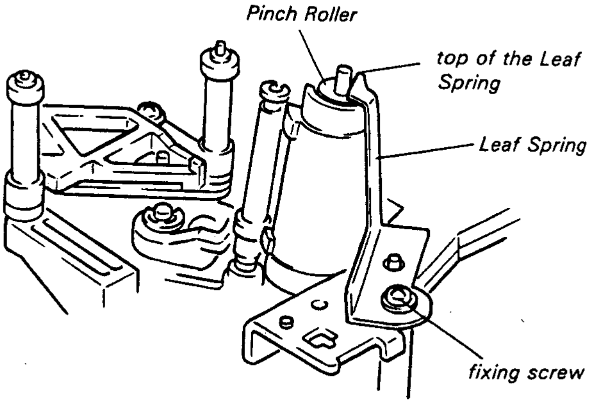
(4) Put the unit into the PLAY mode without a cassette tpae and then put the unit into the EJECT completion mode.

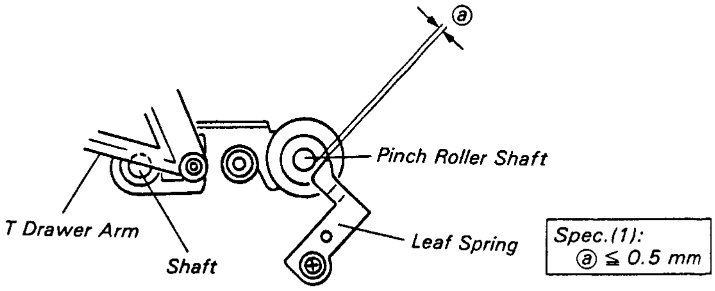
(5) Check that the Leaf Spring touches the Pinch Roller Shaft, and the clearance between the Leaf Spring and the Pinch Roller meets the required specification (2).

Adjustment procedure:

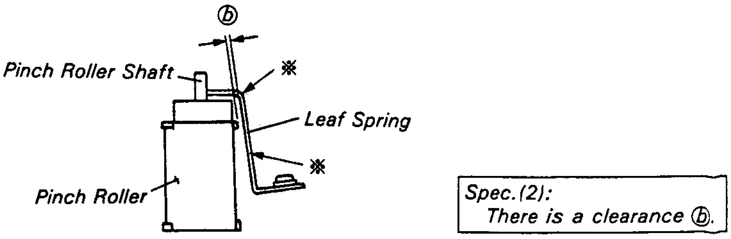
(1) Adjust the position of the Leaf Spring to meet the required specifications (1) and (2). If only specification (2) cannot be obtained, bend the ※ of the Leaf Spring to meet the required specification.


Threading Ring
Gear Box Block
pulley


Pinch Roller
top of the Leaf Spring
Leaf Spring
fixing screw


ⓐ
Pinch Roller Shaft
T Drawer Arm
Shaft
Leaf Spring

Spec.(1):
ⓐ ≦ 0.5 mm


ⓑ
Pinch Roller Shaft
※
Leaf Spring
※
Pinch Roller

Spec.(2):
There is a clearance ⓑ.

SECTION 6
BACK TENSION AND TORQUE ALIGNMENT

6-1. BRAKE SYSTEM ADJUSTMENT

6-1-1. S Brake Torque Adjustment

Tool: Reel table torque measurement tape (100 mm dia.)
Tension scale (200 g full scale)

Mode: EJECT completion / power OFF mode

Check procedure:

(1) Grasp the top of the S Reel Table. While turning it in the clockwise direction approx. 30 degrees, check that the clearance between the Brake Arm and the Lining Holder meets the required specification (1).

(2) Place the jig tape on the S Reel Table and hook a tension scale to the end of the jig tape. Pull out the tape at a constant speed of approx. 9.5cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification (2).

Adjustment procedure:

For Spec. (1)

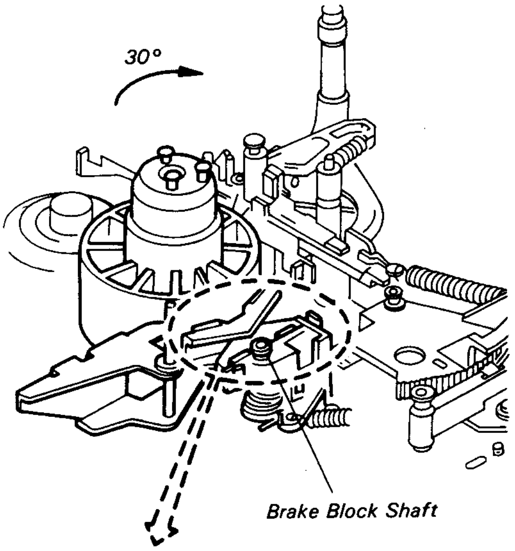
(1) Bend the Brake Block Shaft toward the reel table (or in the opposite direction) by hand.

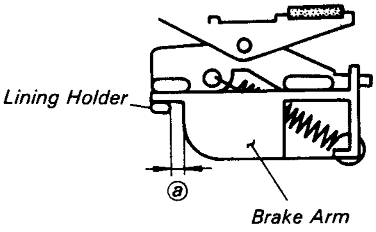
For Spec. (2)

(2) Clean the surface of the reel table with a cloth moistened with cleaning fluid.

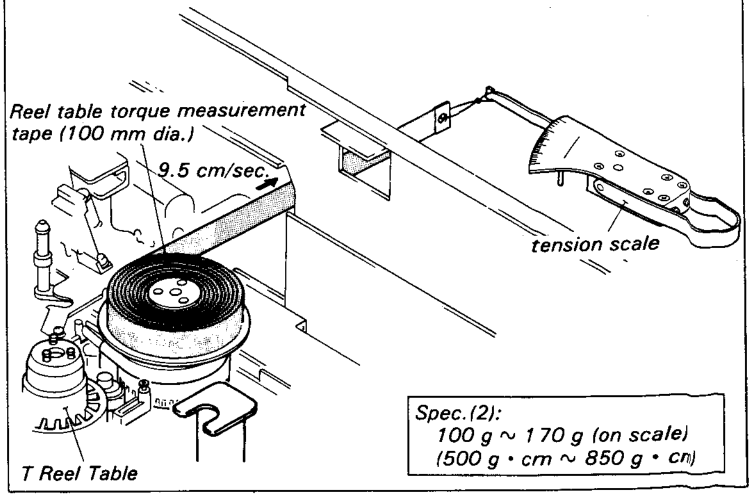
(3) If does not meet the specification (2), replace the Lining Holder and check again.

(4) If does not meet the specification in Step (3), replace the reel table and check again.


30°
Brake Block Shaft


Lining Holder
ⓐ
Brake Arm

Spec. (1):
0.6 mm ≦ ⓐ ≦ 1.0 mm


Reel table torque measurement tape (100 mm dia.)
9.5 cm/sec.
tension scale
T Reel Table

Spec. (2):
100 g ~ 170 g (on scale)
(500 g・cm ~ 850 g・cm)

6-1-2. T Brake Torque Adjustment

Tool: Reel table torque measurement tape (100 mm dia.)
Tension scale (200 g full scale)

Mode: EJECT completion / power OFF mode

Check procedure:

(1) Grasp the top of the T Reel Table. While turning it in the clockwise direction approx. 30 degrees, check that the clearance between the Brake Arm and the Lining Holder meets the required specification (1).

(2) Place the jig tape on the T Reel Table and hook a tension scale to the end of the jig tape. While pushing the T Tension Regulator to the left, pull out the tape at a constant speed of approx. 9.5cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification (2).

Adjustment procedure:

For Spec. (1)

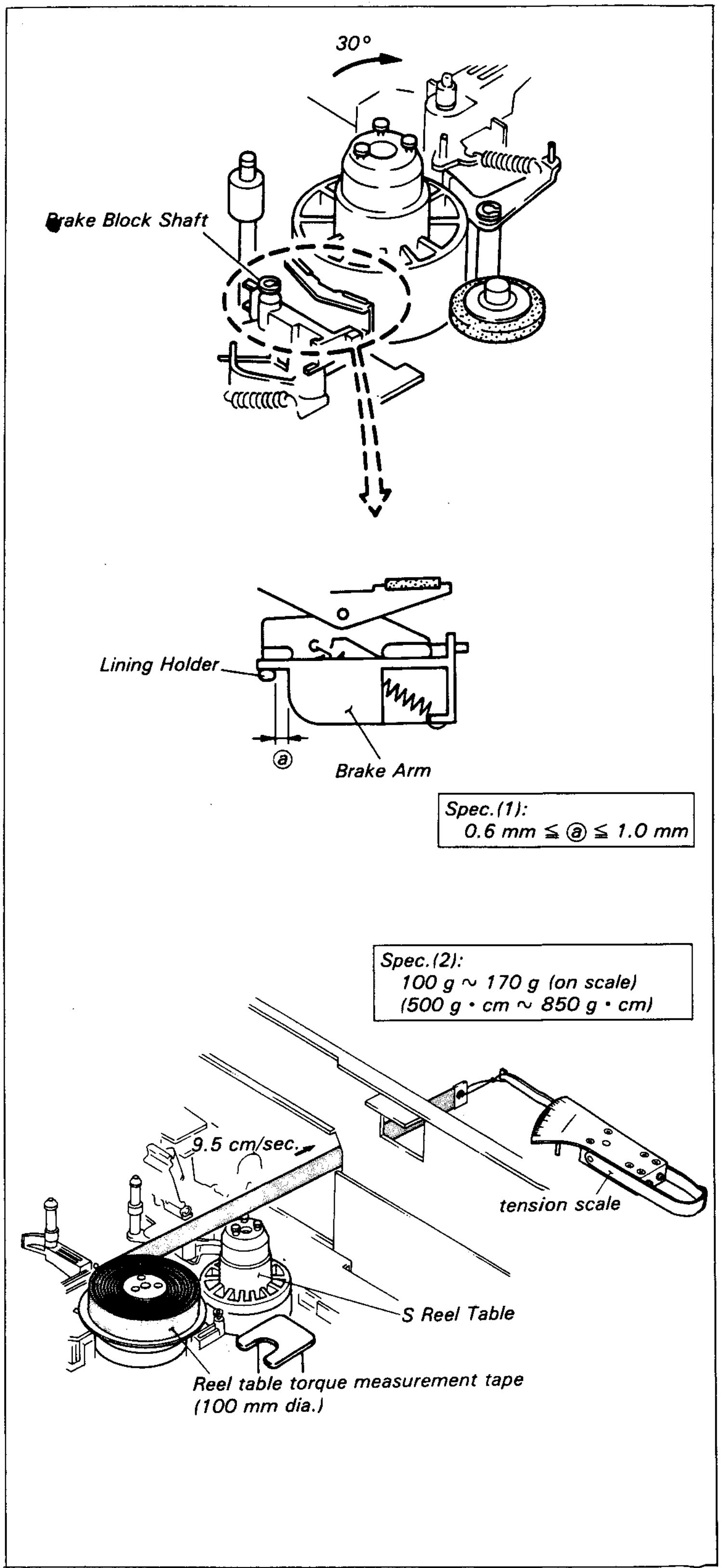
(1) Bend the Brake Block Shaft toward the reel table (or in the opposite direction) by hand.

For Spec. (2)

(2) Clean the surface of the reel table with a cloth moistened with cleaning fluid.

(3) If does not meet the specification (2), replace the Lining Holder and check again.

(4) If does not meet the specification in Step (3), replace the reel table and check again.


30°
Brake Block Shaft
Lining Holder
ⓐ
Brake Arm
9.5 cm/sec.
tension scale
S Reel Table
Reel table torque measurement tape
(100 mm dia.)

Spec.(1):
0.6 mm ≦ ⓐ ≦ 1.0 mm

Spec.(2):
100 g ~ 170 g (on scale)
(500 g · cm ~ 850 g · cm)

6-1-3. REW Brake Torque Adjustment

Mode: REW mode

Tool: Reel table torque measurement tape
(100 mm dia.)
Tension scale (50 g full scale)

Check procedure:

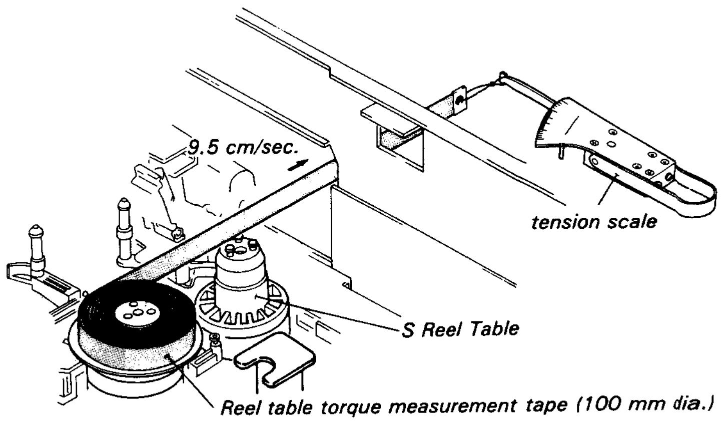
(1) Place the jig tape on the T Reel Table and hook a tension scale to the end of the jig tape.

(2) Put the unit into the REW mode. Pull out the tape at a constant speed of approx. 9.5cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification.

Adjustment procedure:

(1) If does not meet the specification, replace the R Brake Ass'y and check again.

(2) If does not meet the specification in Step (1), replace the Reel Table and check again.


9.5 cm/sec.
tension scale
S Reel Table
Reel table torque measurement tape (100 mm dia.)

Spec.:
18 g ~ 36 g (on scale)
(90 g • cm ~ 180 g • cm)

6-2. F FWD / REW TORQUE ADJUSTMENT

. It is required that the Section 5-7-2, T Idler Solenoid Position Adjustment and Section 5-7-3, S Idler Solenoid Position Adjustment are correct before initiating this adjustment.

Mode: F FWD and REW modes

Tool: Reel table torque measurement tape (100 mm dia.)
Tension scale (500 g full scale)

Check procedure:

F FWD Torque

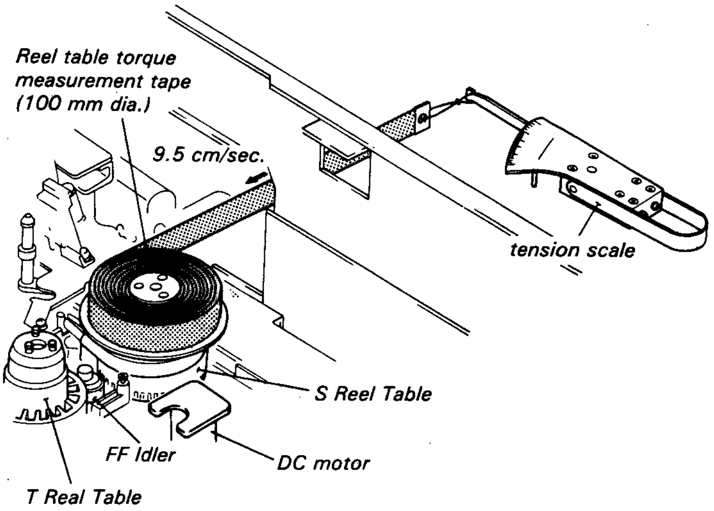
(1) Place the jig tape on the T Reel Table and hook a tension scale to the end of the tape. Pull out the tape.

(2) Put the unit into the F FWD mode. Let the tape be pulled at a constant speed of approx. 9.5cm/sec. Check that the scale reading meets the required specification.

REW Torque

(3) Install the jig tape on the S Reel Table and hook a tension scale to the end of the tape. Pull out the tape.

(4) Put the unit into the REW mode. Let the tape be pulled at the constant speed of approx. 9.5cm/sec. Check that the scale reading meets the required specification.



Spec.:
The Tension scale reading of FF Torque and RWD Torque is more than 300 g • (more than 1500 g • cm)

Adjustment procedure:

Both F FWD Torque and REW Torque are adjusted by the following adjustment procedures.

(1) Clean the surface of the Reel Table, FF idler and belt with a cloth moistened with cleaning fluid. Check the torque again.

(2) If Step (1) does not meet the specification, put the unit into F FWD or REW mode without a cassette tape. Check that the dc voltage at the terminals of the dc motor is 10.5 ± 1.5V. If the dc voltage is out of specification, check that the circuit operation of the SY Board operates correctly.

(3) If does not meet the specification in Steps (1) and (2), replace the Reel Table, FF idler and belt.

6-3. FWD TORQUE ADJUSTMENT

Tool: Special shorting clip
(Refer to the figure.)

Mode: 1/2 FWD SEARCH mode

Check procedure:

(1) Insert a KCS-20 cassette tape wound to the tape end portion.

(2) Put the unit into the FWD SEARCH X 5 mode.

(3) Short between TP3 on the SY-106(1) Board and GND with a shorting clip.

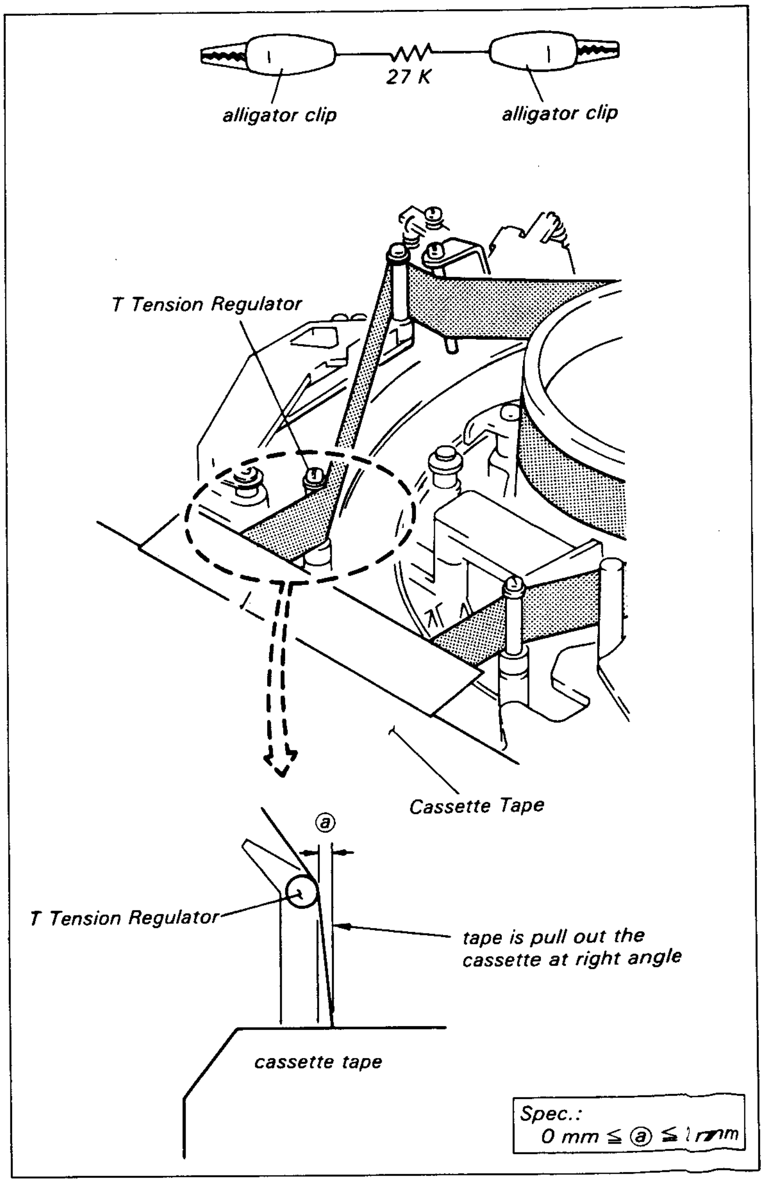
(4) Short between TP11 on the SV-93G Board and GND with a shorting clip.

(5) Short between pin 5 of IC 20 on the SV-93G Board and GND with the special shorting clip. (The unit is put into the FWD SEARCH mode.

(6) Check that the relationship between the T Tension Regulator Arm and cassette tape meets the required specification.

Adjustment procedure:

(1) Adjust RV3 on the SY-106(1) Board until it meets the required specification in the FWD mode.


27 K
alligator clip
alligator clip
T Tension Regulator
Cassette Tape
ⓐ
T Tension Regulator
tape is pull out the cassette at right angle
cassette tape

Spec.:
0 mm ≤ ⓐ ≤ 1 mm

6-4. REV TORQUE ADJUSTMENT

Tool: Spcial shorting clip
(Refer to Section 6-3.)

Mode: 1/2 REV SEARCH mode

Check procedure:

(1) Insert a KCA-60 cassette tape wound to the tape beginning portion.

(2) Put the unit into the FWD SEARCH X 5 mode.

(3) Short between TP3 on the SY-106(1) Board and GND with a shorting clip.

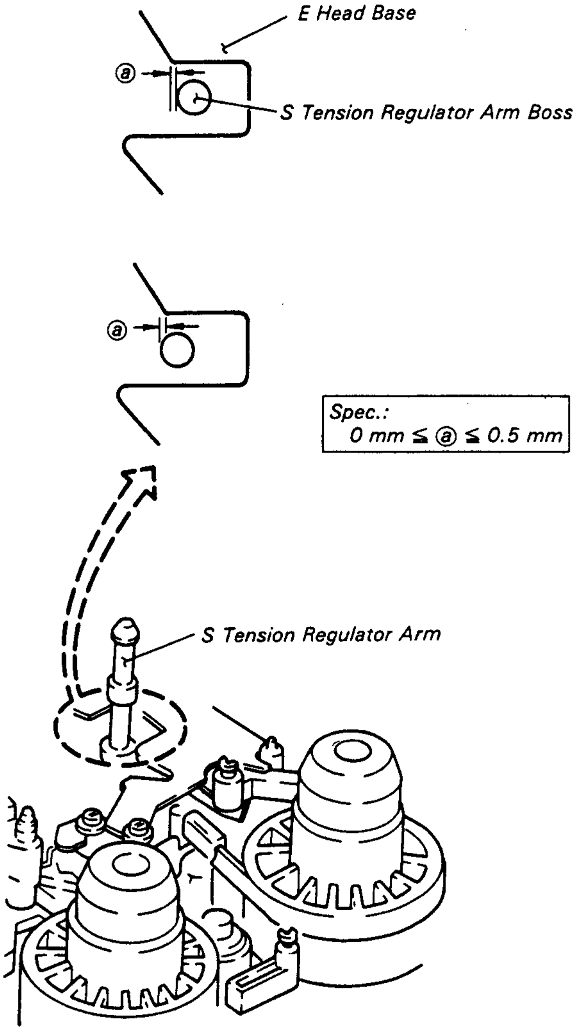
(4) Short between TP11 on the SV-93G Board and GND with a shorting clip.

(5) Short between pin 5 of IC 20 on the SV-93G Board and GND with the special shorting clip. (The unit is put into the FWD SEARCH mode.

(6) Check that the relationship between the S Tension Regulator Boss and the bracket of the Erase Head Base meets the required specification.

Adjustment procedure:

(1) Adjust RV2 on the SY-106(1) Board until it meets the required specification.

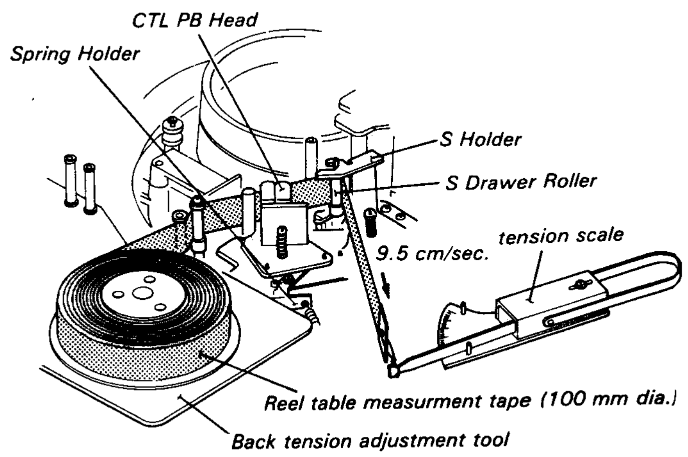


Spec.:
0 mm ≦ ⓐ ≦ 0.5 mm

6-5. F FWD BACK TENSION ADJUSTMENT

- It is required that the Section 5-6-3, S Tension Regulator Operating Position Adjustment is correct before initiating this adjustment.
- It is required that the Section 6-6, FWD Back Tension Adjustment is performed after this adjustment.

Tool: Back tension adjustment jig
Reel table torque measurement tape (100 mm dia.)
Tension scale (50 g full scale)



Spec.:
40 g ~ 47 g (on scale)

Preparation:

(1) Turn the power ON and put the unit into the FR-STOP mode. (When the power is ON, the S Drawer Arm moves and the unit automatically enters the FR-STOP mode.)

(2) Turn the Pulley of Gear Box Block by hand in the direction of the Threading Ring until the S Drawer Roller is in front of the CTL PB Head.

(3) Place the Back Tension Adjustment Jig.

(4) Place the jig tape on the S Reel Table and pull out the tape as shown in the figure. Check that the tape does not curl at the flange of the S Drawer Roller.

(5) Turn the Pulley in the opposite direction in Step (2) until the S Drawer Roller is engaged with the S Holder.

(6) Hook a tension scale to the end of the tape.

Check procedure:

(1) Press the F FWD button and put the unit into the F FWD mode.

(2) Pull out a tape at a constant speed of approx. 9.5cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification.

Adjustment procedure:

(1) Move the position of the Spring Holder with a flatblade screwdrivers (3mm dia.) to meet the required specification.

(2) After the adjustment, perform the check procedures again.

(3) Perform the Section 6-6, FWD Back Tension Adjustment.

6-6. FWD BACK TENSION ADJUSTMENT

. It is required that the Section 5-6-3, S Tension Regulator Operating Position Adjustment and the Section 6-5, F FWD Back Tension Adjustment are correct before initiating this adjustment.

Tool: Back tension adjustment jig
Reel table torque measurement tape
(100 mm dia.)
Tension scale (100 g full scale)

Preparation:

(1) Push the Skew Lock Arm in the direction of the arrow.

(2) Turn the power ON and put the unit into the FR-STOP mode. (When the power is ON, the S Drawer Roller moves and the unit automatically enters the FR-STOP mode.)

(3) Turn the pulley of Gear Box Block by hand in the direction of the Threading Ring until the S Drawer Roller is in front of the CTL PB Head.

(4) Place the Back Tension Adjustment Jig.

(5) Place the jig tape on the S Reel Table and pull out the tape as shown in the figure. Check that the tape does not curl at the flange of the S Drawer Roller.

(6) Turn the Pulley of the Gear Box in opposite direction in Step (3) until the S Drawer Roller is engaged with the S Holder.

(7) Hook a tension scale to the end of tape.

Check procedure:

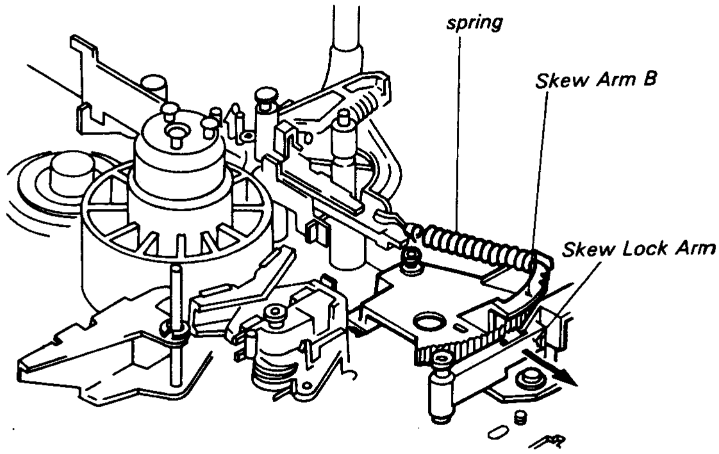
(1) Press the PLAY button and put the unit into the PLAY mode.

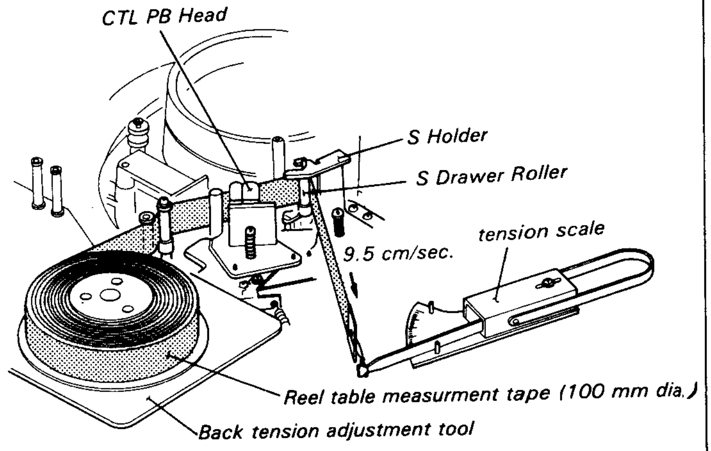
(2) Pull out the tape at a constant speed of approx. 9.5cm/sec. in the direction of the arrow. Check that the scale reading meets the required specification.

Adjustment procedure:

(1) Adjust the position of the proper spring hook of the Skew Arm B to meet the required specification.

(2) After adjustment, perform the check procedures again.




CTL PB Head
S Holder
S Drawer Roller
tension scale
9.5 cm/sec.
Reel table measurment tape (100 mm dia.)
Back tension adjustment tool

Spec.:
70 g ~ 75 g (on scale)

SECTION 7

TAPE RUN ALIGNMENT

7-1. F FWD/REW MODES TAPE PATH ADJUSTMENT

Mode: F FWD and REW modes

Check procedure:

(1) Inserat a KCA-60 cassette tape which has advanced about half way through (about 30 minutes). Put the unit into the REW mode.

(2) Check that the tape tension is equal around the T Drawer Arm. (Spec.1)

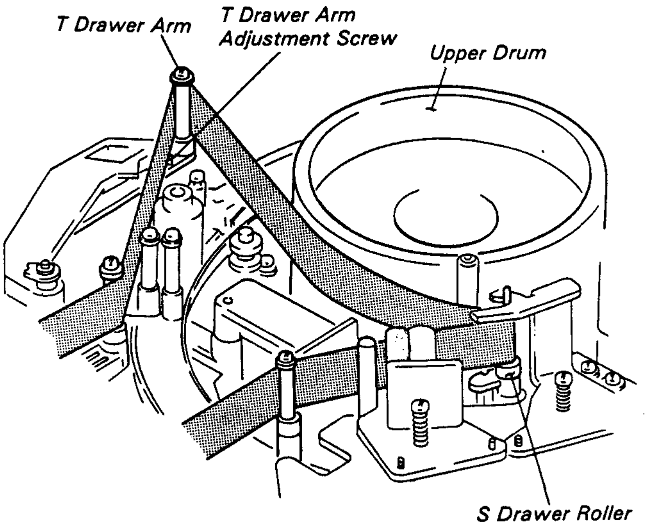
(3) Check that the tape runs without any curling at the upper or lower flange of the S Drawer Roller in the REW mode. (Spec. 2)

(4) Put the unit into the STOP mode, and then into the REW mode. Check that the tape runs without any curling at the S Drawer Roller at the moment just after entering the REW mode. (Spec. 3)

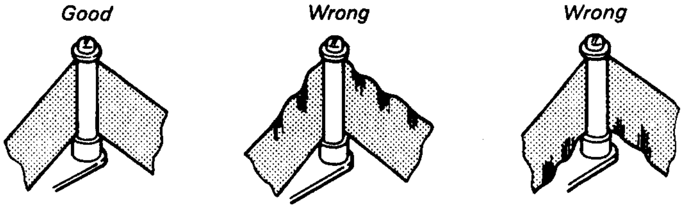
(5) Put the unit into the F FWD mode. Check that the tape runs without any curling at the S Drawer Roller and T Drawer Arm at the moment of just after entering the F FWD mode. (Spec. 4)

Adjustment procedure:

(1) Adjust the slantness of the T Drawer Arm by turning the T Drawer Arm Adjustment Screw.



Spec.(1):



7-2. T CORRECTION GUIDE SLANTNESS ADJUSTMENT

Tool: Dental mirror

Check procedure:

(1) Insert a KCA-60 cassette tape and put the unit into the FR-STOP mode. Just as the Pinch Roller passes in front of the T Correction Guide, quickly turn the power OFF.

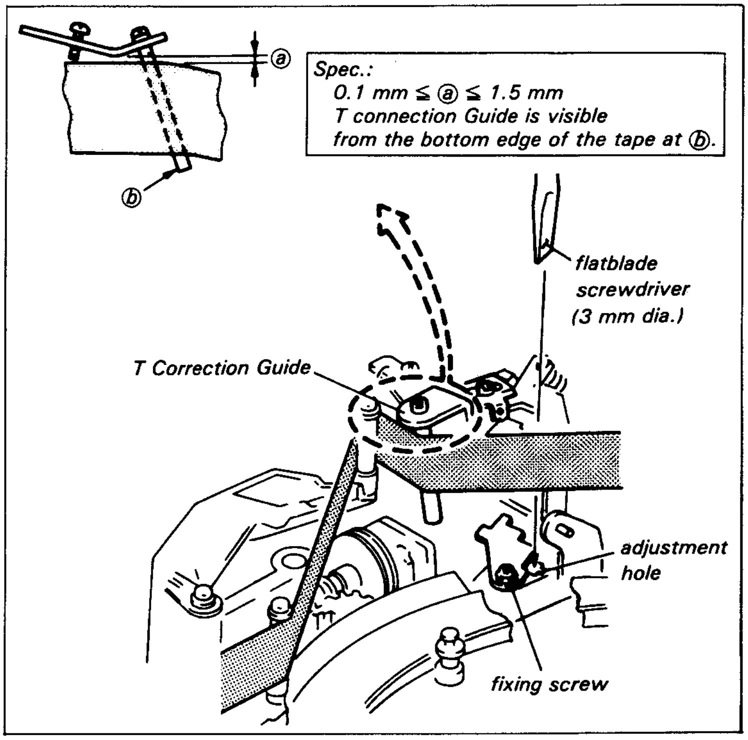
(2) Check that the clearance between the upper bracket of the T Correction Guide and the top edge of the tape meets the required specification.

Adjustment procedure:

(1) Loosen the fixing screw of the T Correction Guide 1/4 to 1/2 turn.

(2) Adjust the position of the T Correction Guide with a flatblade screwdriver (3 mm dia.) to meet the required specification.

(3) After adjustment, perform Section 7-3, PLAY Mode Tape Path Adjustment (1).


ⓐ
ⓑ
flatblade screwdriver (3 mm dia.)
T Correction Guide
adjustment hole
fixing screw

Spec.:
0.1 mm ≤ ⓐ ≤ 1.5 mm
T connection Guide is visible from the bottom edge of the tape at ⓑ.

7-3. PLAY MODE TAPE PATH ADJUSTMENT (1)

. It is required that Section 7-2, T Correction Guide Slantness Adjustment and Section 7-1, F FWD/REW Modes Tape Path Adjustment are correct before initiating this adjustment.

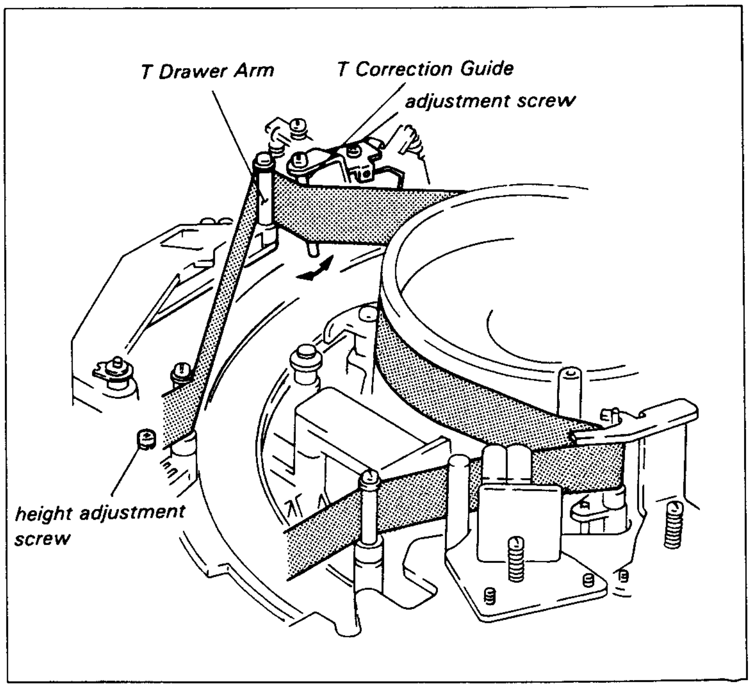
Mode: PLAY mode with a cassette tape

Check procedure:

(1) Insert a KCA-60 cassette tape which has been advanced about half way through (30 minutes). Put the unit into the PLAY mode.

(2) Check that the tape runs without any curling at the upper or lower flange of the T Drawer Guide. (Spec.1)

(3) Check that tape tension is equal at the top and bottom edges of the tape around the T Drawer Guide, and that the tape runs without any curling at the lower flange of the T Drawer Guide. (Spec.2)


T Drawer Arm
T Correction Guide adjustment screw
height adjustment screw

Adjustment procedure:

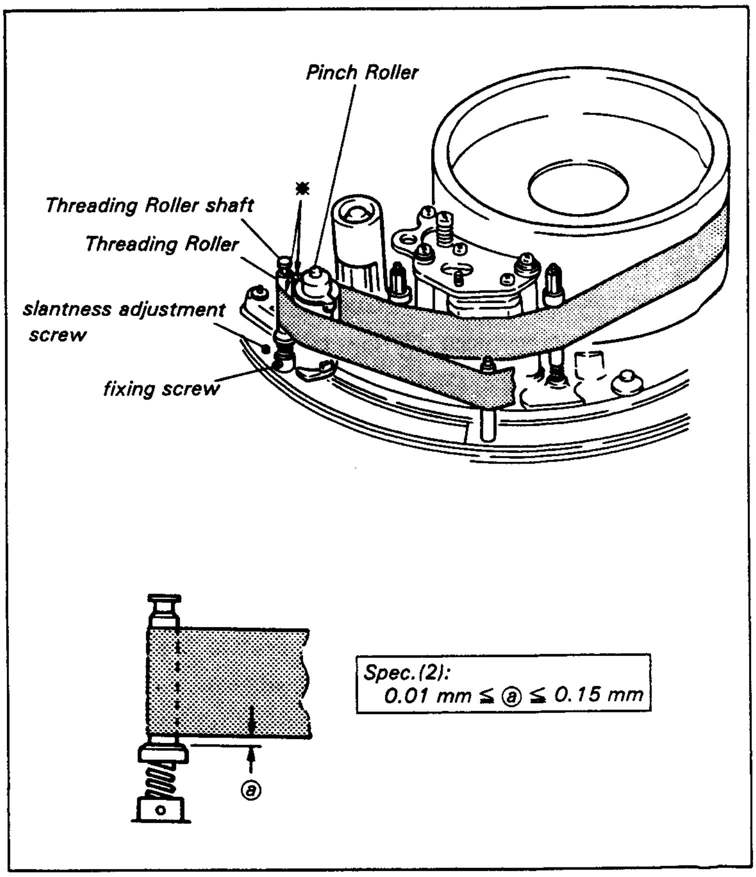
For Spec.1

(1) Adjust the height of the T Drawer Arm by turning the T Drawer Arm Height Adjustment Screw.

For Spec.2

(2) Bend the T Correction Guide in the direction of the arrow. Turn the adjustment screw if necessary to meet the required specification.

7-4. PLAY MODE TAPE PATH ADJUSTMENT (2)



Tool: Dental mirror

Mode: PLAY mode with a cassette tape

Check procedure:

(1) Insert a KCA-60 cassette tape which has been advanced about half way through (30 minutes). Put the unit into the PLAY mode.

(2) At the * marks (two positions) in the figure, check that tape tension is equal at the top and bottom edges of the tape. (Spec.1)

(3) Check that the clearance between the lower flange of the Threading Roller and the bottom edge of the tape meets the required specification (2).

Adjustment procedure:

(1) Loosen the fixing screw at the bottom of the Threading Roller.

For Spec.1

(2) Adjust the slantness of the Threading Roller by turning the slantness adjustment screw.

NOTE:

- After adjustment, perform Section 7-5, REV Mode Tape Path Adjustment and Section 7-6, Tape Path Adjustment Around The Pinch Roller.

For Spec.2

(3) Adjust the height of the Threading Roller by turning the Threading Roller Shaft to meet the required specification.

(4) Check that the slantness and the height meet the required specifications (1) and (2).

(5) After adjustment, tighten the fixing screw of the Threading Roller and perform the check procedure.

7-5. REV MODE TAPE PATH ADJUSTMENT

Check procedure:

(1) Insert a KCA-60 cassette tape which has been advanced about half way through (30 minutes).

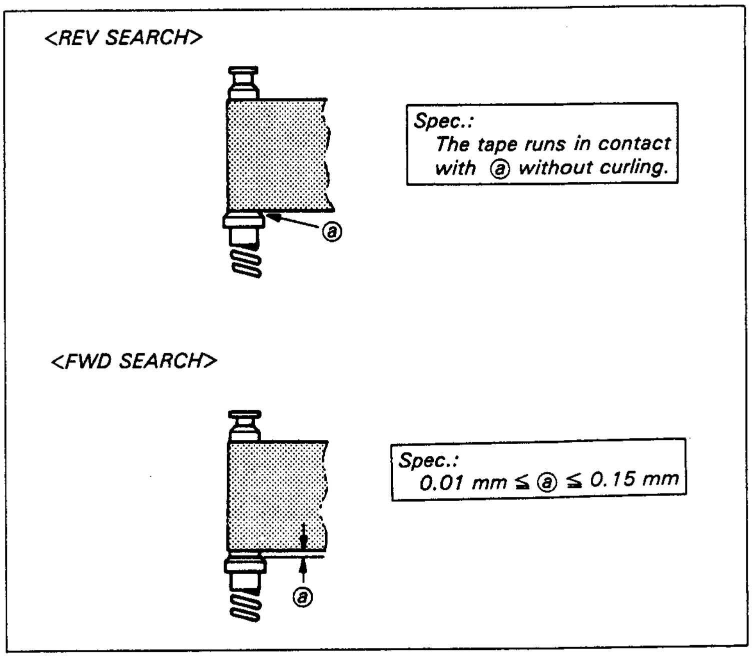
(2) Put the unit into the REV SEARCH mode. Check that the tape runs in contact with the lower flange of the Threading Roller without curling.

(3) Put the unit into the FWD SEARCH mode. Check that the clearance between the lower flange of the Threading Roller and the bottom edge of the tape meets the required specification and the tape does not curl at the lower or upper flange of TG-4.

Adjustment procedure:

(1) Fine adjust the height of the Threading Roller by turning the Threading Roller Shaft.

(2) After adjustment, perform the Section 7-4, PLAY Mode Tape Path Adjustment (2).



<REV SEARCH>

Spec.:
The tape runs in contact with ⓐ without curling.

<FWD SEARCH>

Spec.:
0.01 mm ≦ ⓐ ≦ 0.15 mm

7-6. TAPE PATH ADJUSTMENT AROUND PINCH ROLLER

Check procedure:

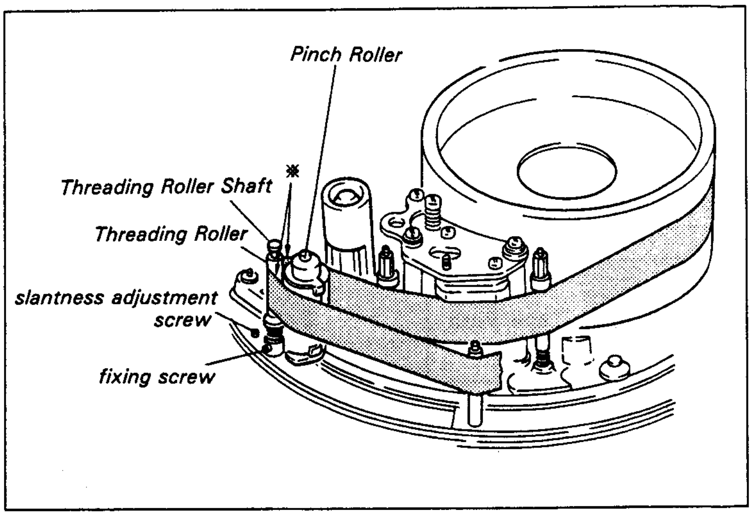
(1) Insert a KCA-60 cassette tape wound to the tape beginning portion.

(2) When put the unit into the PLAY, REV SEARCH, FWD SEARCH modes, check that tape wrinkle does not appear, or disappear within 2 sec.

Adjustment procedure:

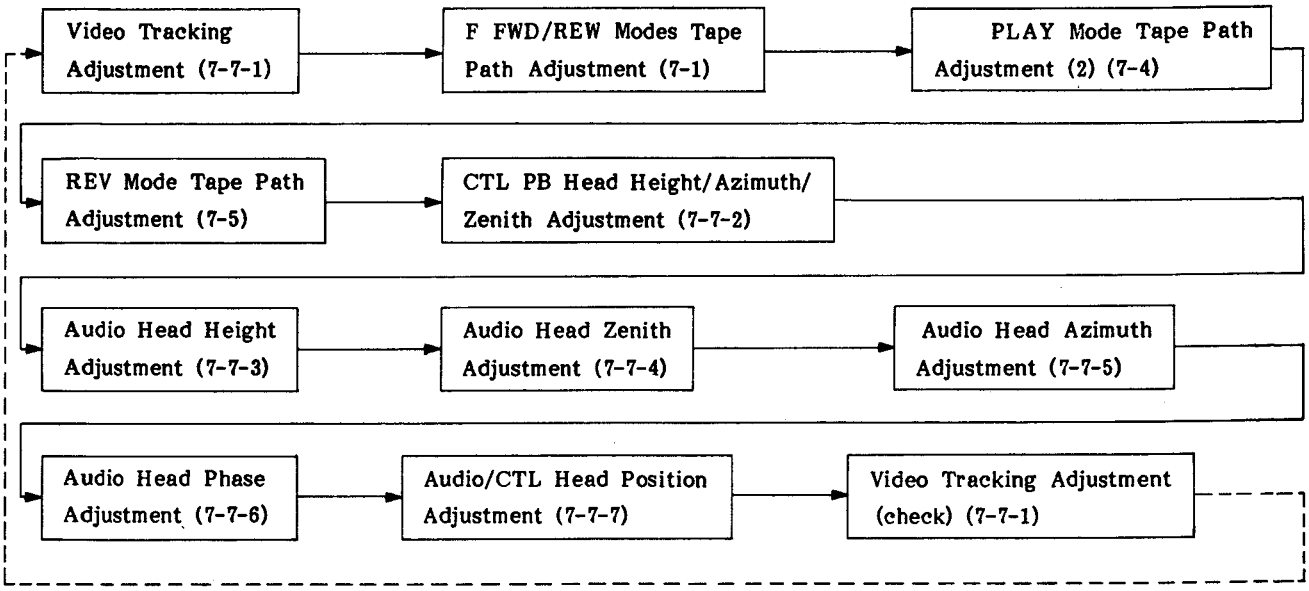
(1) Adjust the slantness and height of the Threading Roller until it meets the required specification.

(2) After adjustment, perform Section 7-4, PLAY Mode Tape Path Adjustment (2), Section 7-5, REV Mode Tape Path Adjustment, and Section 7-7, Tracking Adjustment.


Pinch Roller
Threading Roller Shaft
*
Threading Roller
slantness adjustment screw
fixing screw

7-7. TRACKING ADJUSTMENT

. Perfomrm the Tracking Adjustment is as follw:
(Numbers in the parenthesis refer to Section Nos.)


Video Tracking Adjustment (7-7-1)
F FWD/REW Modes Tape Path Adjustment (7-1)
PLAY Mode Tape Path Adjustment (2) (7-4)
REV Mode Tape Path Adjustment (7-5)
CTL PB Head Height/Azimuth/ Zenith Adjustment (7-7-2)
Audio Head Height Adjustment (7-7-3)
Audio Head Zenith Adjustment (7-7-4)
Audio Head Azimuth Adjustment (7-7-5)
Audio Head Phase Adjustment (7-7-6)
Audio/CTL Head Position Adjustment (7-7-7)
Video Tracking Adjustment (check) (7-7-1)

7-7-1. Video Tracking Adjustment

Tool: Alignment tape, RR5-2SC PAL
Flatness Plate
Oscilloscope
Dental mirror

Preparation:

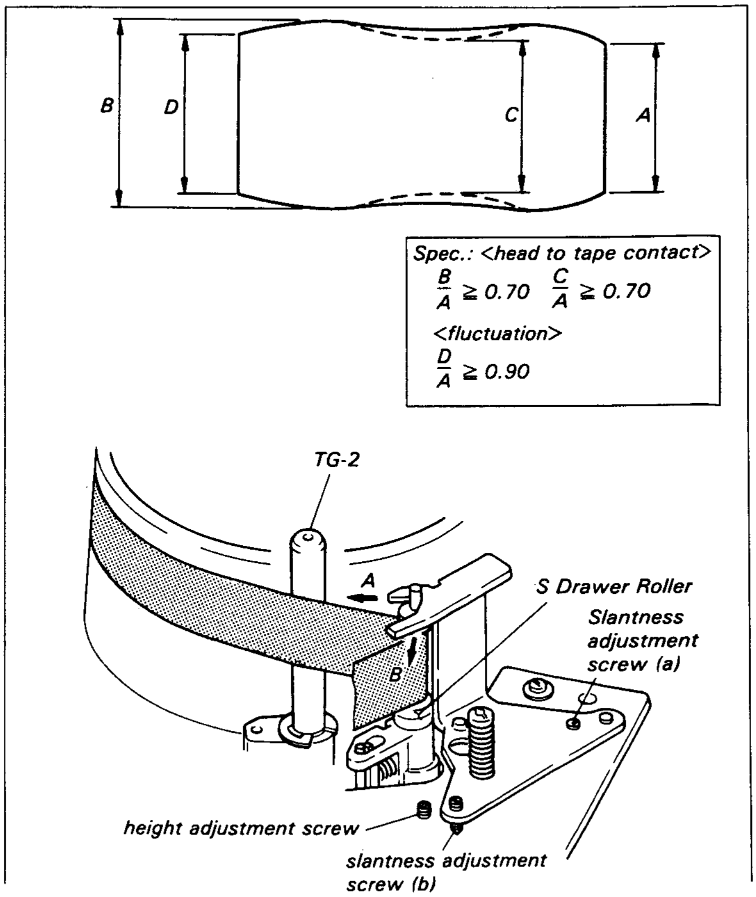
(1) Connect the oscilloscope to TP31 on the VO-19A Board.

(2) Playback the color-bar signal portion of the alignment tape.

Check procedure:

(1) While turning the TRACKING control knob, check that the RF waveform maintains a flat envelope while the amplitude increases and decreases.

(2) Check that fluctuation and head-to-tape contact of the RF envelope are within the specification at the center detent position of the TRACKING control knob.


B
D
C
A
TG-2
A
B
S Drawer Roller
Slantness adjustment screw (a)
height adjustment screw
slantness adjustment screw (b)

Spec.: <head to tape contact>
$\frac{B}{A} \geq 0.70$ $\frac{C}{A} \geq 0.70$
<fluctuation>
$\frac{D}{A} \geq 0.90$

Adjustment procedure:

- The S Drawer Roller Block has three adjustment screws. These three adjustment screws function as follows:

(i) Slantness adjustment screw (a)

Turn this screw in the clockwise direction, and the S Drawer Roller slants in the direction of arrow A.

(ii) Slantness adjustment screw (b)

Turn this screw in the counterclockwise direction, and the S Drawer Roller slants in the direction of arrow B. This screw is used for removing tape curl at the upper flange of the S Drawer Roller. However, this screw is used only when the tape curls at the flange of the S Drawer Roller, even though the RF output waveform meets the required specification.

(iii) Height adjustment screw

Turn this screw in the clockwise direction, and the height of the S Drawer Roller lowers.

- When tape guides (TG-3, TG-4) are adjusted, loosen the locking screw about 1 turn and adjust the height by turning the height adjustment nut.
- **When tracking at the entrance side of the drum is not good.**

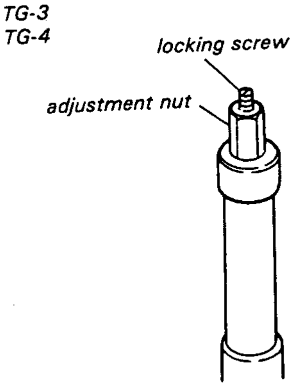
(1) Turn the TRACKING control knob until the RF envelope amplitude is 70 to 80 % of maximum.

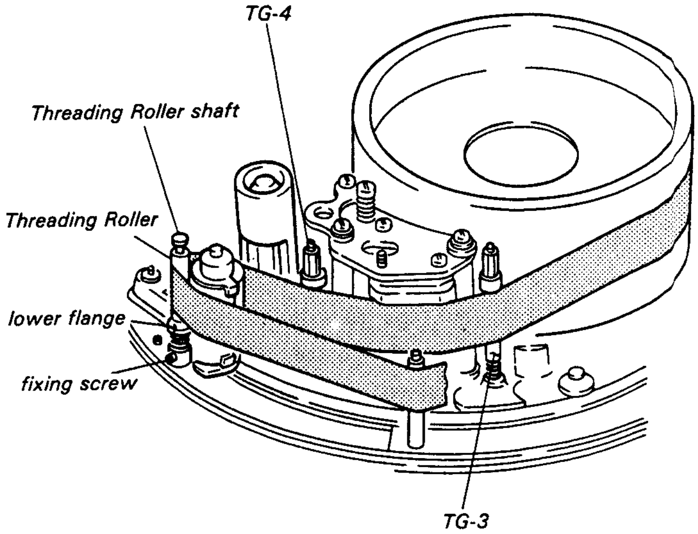
(2) Adjust the height and the slantness of the S Drawer Roller by turning the height adjustment screw and the slantness adjustment screw (a) until the RF envelope of the entrance side is flat.

NOTE:

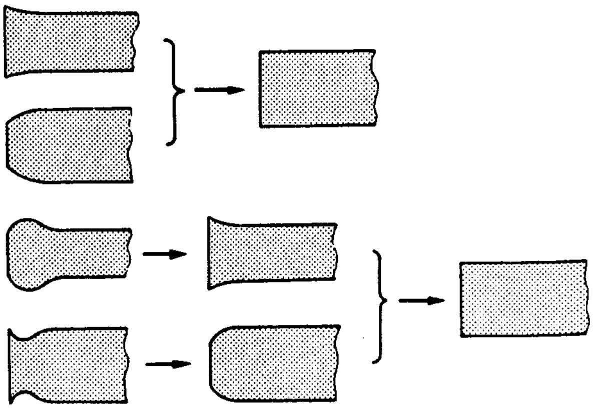
(i) Check the surface of the running tape very carefully around the S Drawer Roller. Check that tape tension is equal at the top and bottom of the tape.

(ii) Check that the tape runs in contact with the upper flange of the S Drawer Roller without any curling.





<entrance side>



- **When tracking at the center of the drum is not good.**

(It is required that the Tracking adjustment at the entrance side of the drum is correct before initiating this adjustment.)

(3) Turn the TRACKING control knob until the RF envelope amplitude is 70 to 80% of maximum.

(4) Adjust the height and the slantness of the S Drawer Roller by turning the height adjustment screw and the slantness adjustment screw (a) until the RF envelope at the center of the drum is flat.

NOTE:

(i) Adjust the slantness adjustment screw (a) in the clockwise direction within a 10 degree angle.

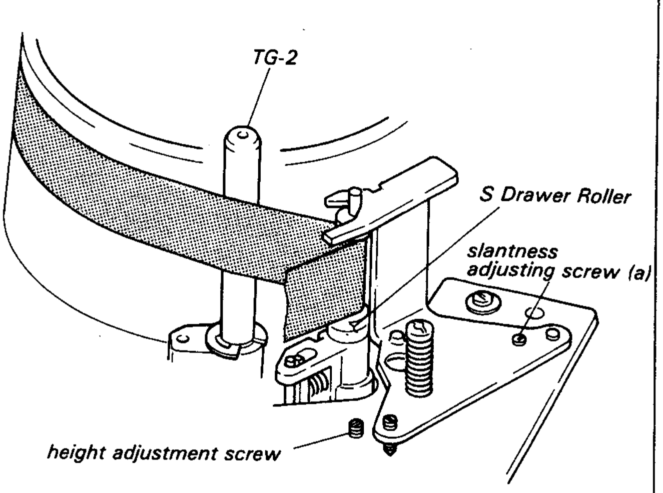
(ii) When the tracking of the center of the drum is adjusted, the FR envelope at the entrance side of the drum should remain flat.

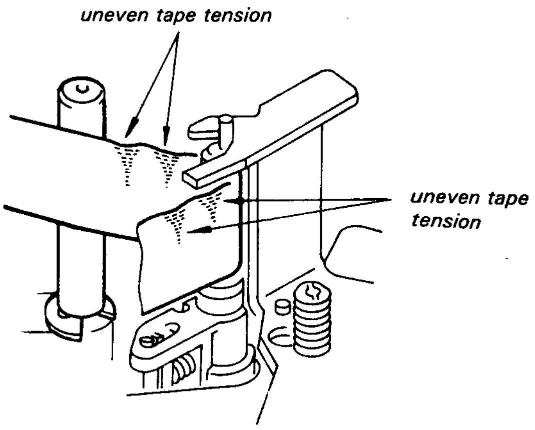
(iii) Check that the tape runs in contact with the upper flange of the S Drawer Roller without any curling.

(5) If the RF envelope is not flat in Step (4), adjust the height of TG-3 and TG-4.

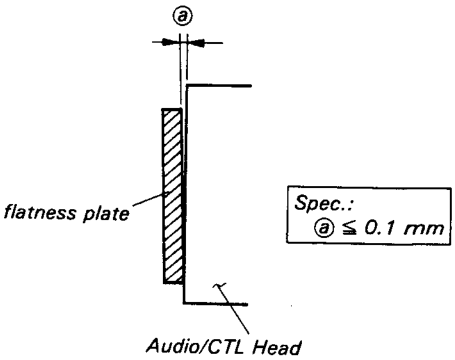
(6) If the RF envelope is not flat in Steps (4) and (5), adjust the zenith of the Audio/CTL Head within the allowable range. Adjust the height of TG-3 and TG-4 again.

(7) Check that the clearance between the bottom edge of the tape and the lower flange of the Threading Roller is 0.01 mm to 0.15 mm. If it is out of the specification, adjust the height of the Threading Roller by turning the the Threading Roller Shaft.


TG-2
S Drawer Roller
slantness adjusting screw (a)
height adjustment screw


uneven tape tension
uneven tape tension

<zenith adjustment for the Audio/CTL Head>


ⓐ
flatness plate
Spec.:
ⓐ ≦ 0.1 mm
Audio/CTL Head

. When loosen the fixing screw of the Threading Roller, press the STOP button. When the Threading Roller comes near the Sug-ring Stopper, turn the power OFF. Loosen the fixing screw of the Threading Roller with a L-shaped hexagonal wrench. After adjustment, tighten the fixing screw and check that it meet the required specification.

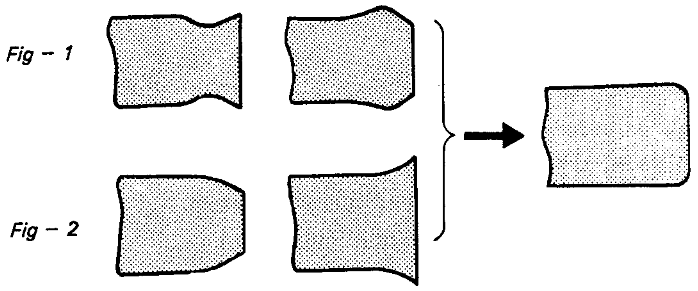
. When tracking at the exit side of the drum is not good.

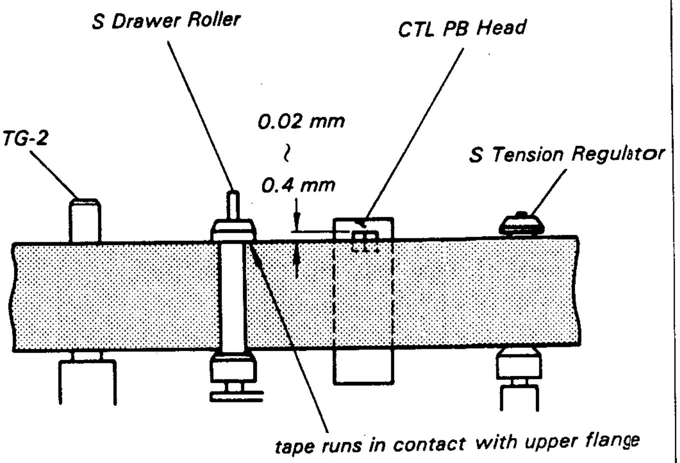
(8) Turn the TRACKING control knob until the RF envelope amplitude is 70 to 80% of maximum.

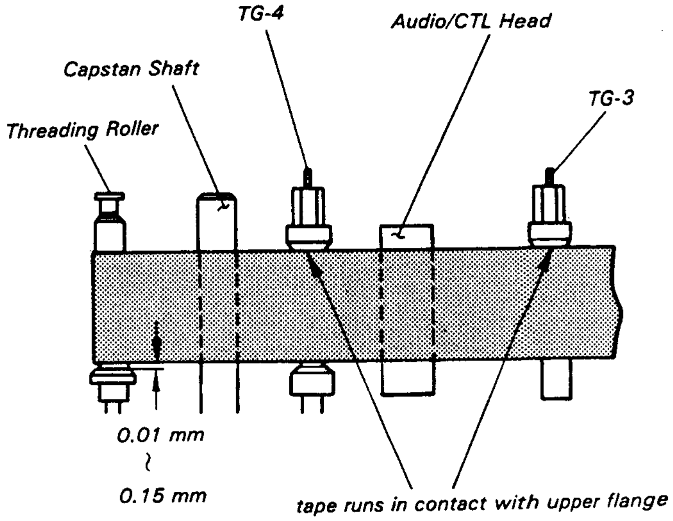
(9) If the RF envelope is not flat as shown in the figure 1, adjust the height of TG-4 until the RF envelope is flat. After this adjustment, adjust the height of TG-3 so that the tape runs in contact with the upper flange. If the RF envelope is not flat as shown in the figure 2, adjust the height of TG-3 and TG-4 until the RF envelope is flat. If it is not, adjust the zenith of the Audio/CTL Head within the allowable range. Adjust the height of TG-3 and TG-4 again.

(10) Check that the clearance between the bottom edge of the tape and the lower flange of the Threading Roller is 0.01 mm to 0.15 mm. If it is out of the specification, adjust the height of the Threading Roller by turning the Threading Roller Shaft.

<entrance side>




S Drawer Roller
CTL PB Head
0.02 mm
~
0.4 mm
TG-2
S Tension Regulator
tape runs in contact with upper flange


TG-4
Audio/CTL Head
Capstan Shaft
TG-3
Threading Roller
0.01 mm
~
0.15 mm
tape runs in contact with upper flange

7-7-2. CTL PB Head Height/Azimuth/Zenith Adjustments

- The CTL PB Head Height, Azimuth, and Zenith Adjustments are closely related. When performing any of these adjustments, always perform the other two adjustments at the same time.

Tool: Flatness plate

Check procedure:

(1) Check that top and bottom clearances between the Full Erase Head and TG-1 meets the required specification.
(Spec. 2 : azimuth check)

(2) Check that the clearance between the Full Erase Head and the Flatness Plate meets the required specification, when the flatness plate is placed on the Full Erase Head and TG-1.
(Spec. 3 : zenith check)

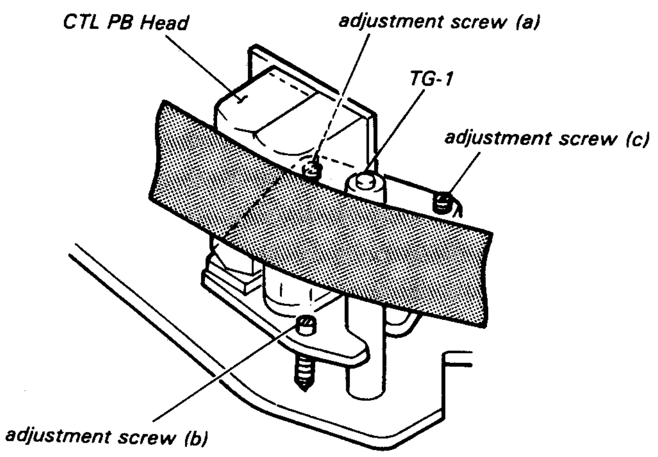
(3) Insert a cassette tape, and put the unit into the PLAY mode.

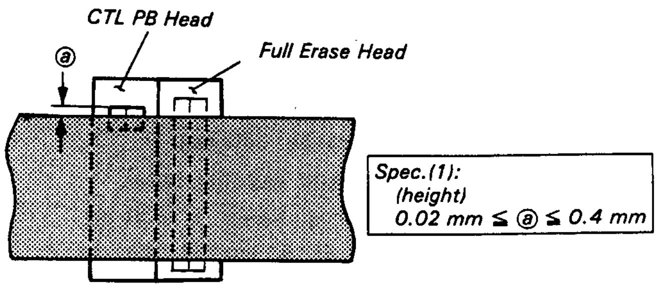
(4) Check that the relationship between the top edge of tape and the CTL PB Head meets the required specification.
(Spec. 1 : height check)

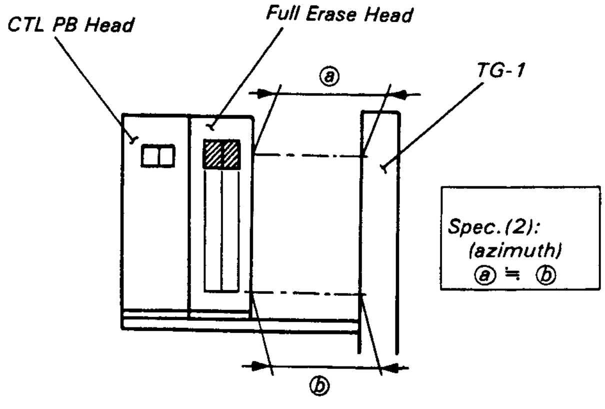
(1) Adjust adjustment screw (a) to meet the required specification (2).

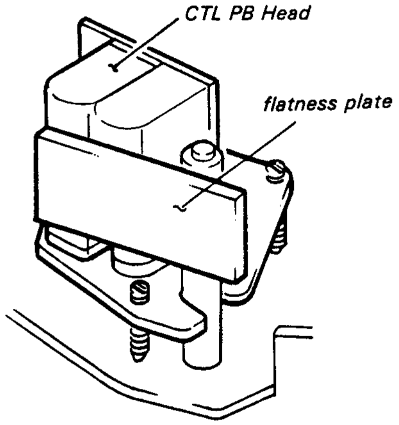
(2) Adjust adjustment screw (b) to meet the required specification (3).

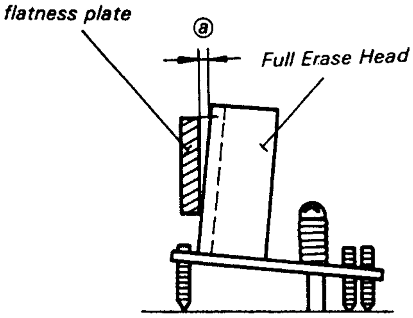
(3) Turn the three adjustment screws an equal amount in the clockwise or counterclockwise direction to meet the required specification (1).


CTL PB Head
adjustment screw (a)
TG-1
adjustment screw (c)
adjustment screw (b)

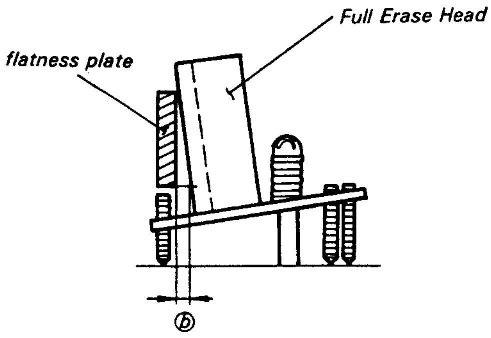

CTL PB Head
ⓐ
Full Erase Head
Spec.(1):
(height)
0.02 mm ≦ ⓐ ≦ 0.4 mm


CTL PB Head
Full Erase Head
ⓐ
TG-1
ⓑ
Spec.(2):
(azimuth)
ⓐ ≒ ⓑ


CTL PB Head
flatness plate


flatness plate
ⓐ
Full Erase Head

Spec.(3):
(zenith)
ⓐ ≤ 0.1 mm


Full Erase Head
flatness plate
ⓑ

7-7-3. Audio Head Height Adjustment

Tool: Alignment tape, RR5-2SC PAL
VTVM or oscilloscope

Preparation:

(1) Connect the VTVM or oscilloscope to the AUDIO OUT CH-1 and CH-2 connectors of the connector panel.

(2) Playback the audio 1 kHz signal portion of the alignment tape.

Check procedure:

(1) Check that the CH-1 output level increase is less than 0.5 dB when pressing down at A. If it is out of the specification, perform adjustment procedures (1) and (2).

(2) Check that the CH-2 output level increase is less than 0.5 dB when pushing up at B. If it is out of the specification, perform adjustment procedures (3) and (4).

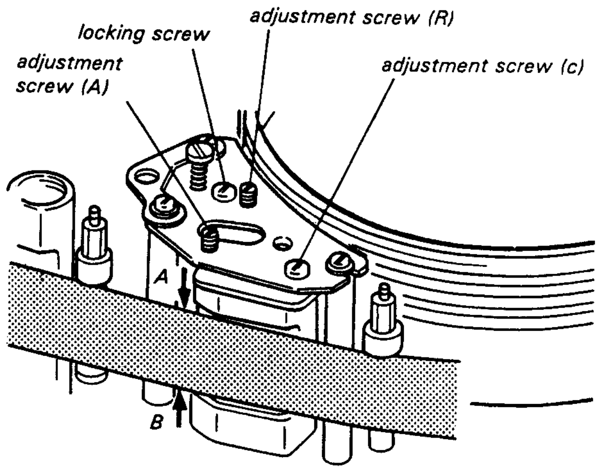
Adjustment procedure:

(1) Loosen the locking screw and turn adjustment screws (R) and (A) an equal amount in the counterclockwise direction. Turn adjustment screw (C) the same amount in the clockwise direction.

(2) Tighten the locking screw and check the height of the Audio Head as described in the check procedure.

(3) Loosen the locking screw and turn adjustment screws (R) and (A) an equal amount in the clockwise direction. Turn the adjustment screw (C) the same amount in the counterclockwise direction.

(4) Tighten the locking screw and check the height of the Audio Head as described in the check procedure.



Spec.:
- *The level increase of the CH-1 is less than 0.5 dB when pressing down at A.*
- *The level increase of the CH-2 is less than 0.5 dB when pushing up at B.*

7-7-4. Audio Head Zenith Adjustment

Tool: Flatness Plate

Check procedure:

(1) When the Flatness Plate is set on the Audio Head and TG-3, check that the clearance between the Audio Head and the Flatness Plate meets the required specification.

Adjustment procedure:

. When the clearance is out of spec. at the top of the Audio Head.

(1) Turn adjustment screw (R) in the counterclockwise direction.

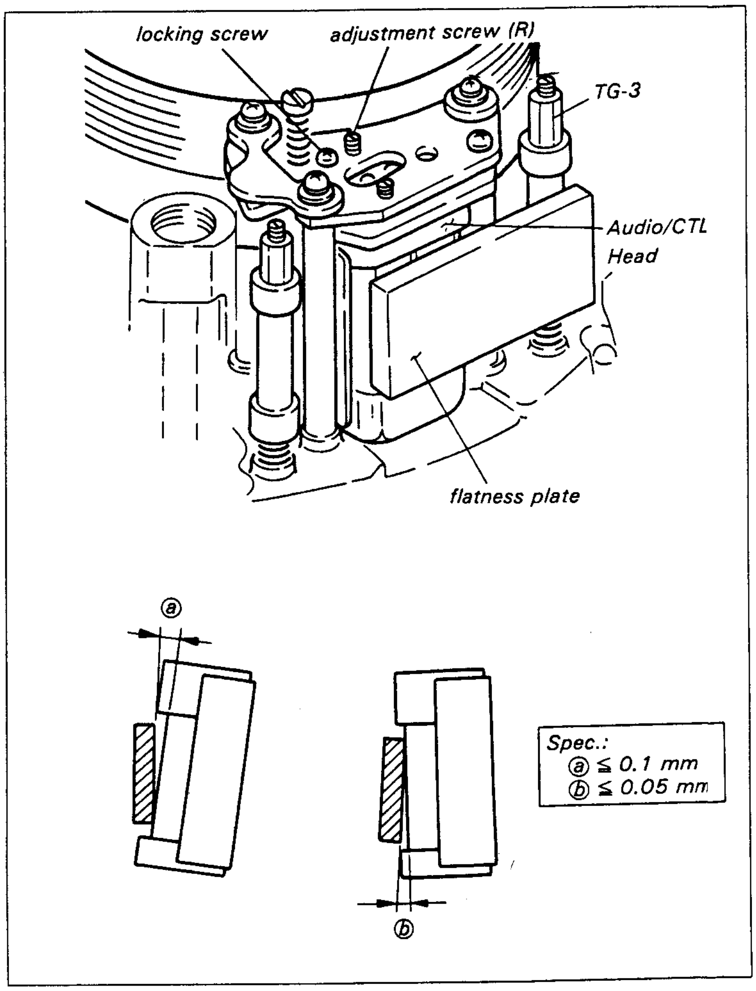
(2) Tighten the locking screw and check the zenith again.

. When the clearance is out of spec. at the bottom of the Audio Head.

(3) Loosen the locking screw 1/4 to 1/2 turn.

(4) Turn adjustment screw (R) in the clockwise direction.

(5) Tighten the locking screw and check the zenith again.



7-7-5. Audio Head Azimuth Adjustment

Tool: Alignment tape, RR5-2SC PAL
VTVM or oscilloscope

Preparation:

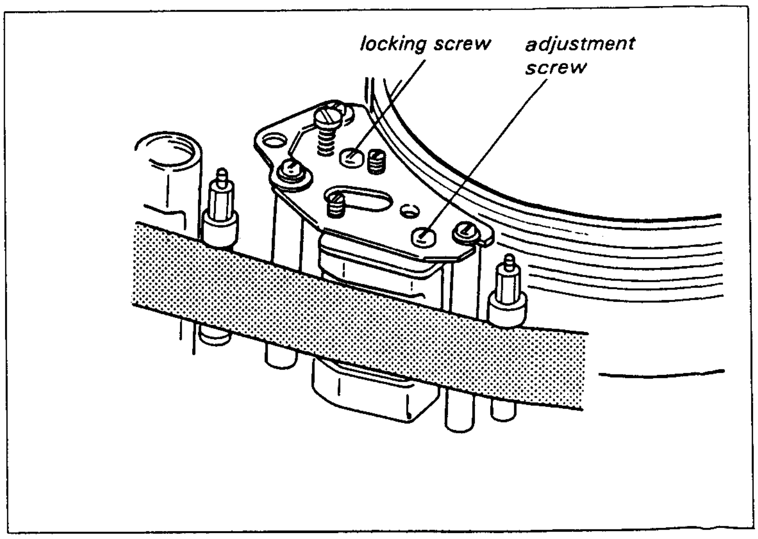
(1) Connect the VTVM or oscilloscope to the AUDIO OUT CH-1 or CH-2 connector of the connector panel.

(2) Playback the audio 10 kHz signal portion of the alignment tape.

Adjustment procedure:

(1) Loosen the locking screw and adjust the audio output level to maximium by turning the adjustment screw.

(2) Tighten the locking screw and performn the check procedure.



7-7-6. Audio Head Phase Adjustment

Tool: Alignment tape, RR5-2SC PAL
Oscilloscope

Preparation:

(1) Connect the horizontal and vertical terminals of the oscilloscope to the AUDIO OUT CH-1 and CH-2 connectors of the connector panel.

(2) Playback the audio 1 kHz signal portion of the alignment tape.

(3) Adjust the scope for a lissajous waveform with horizontal and vertical amplitudes of 6 cm.

Check procedure:

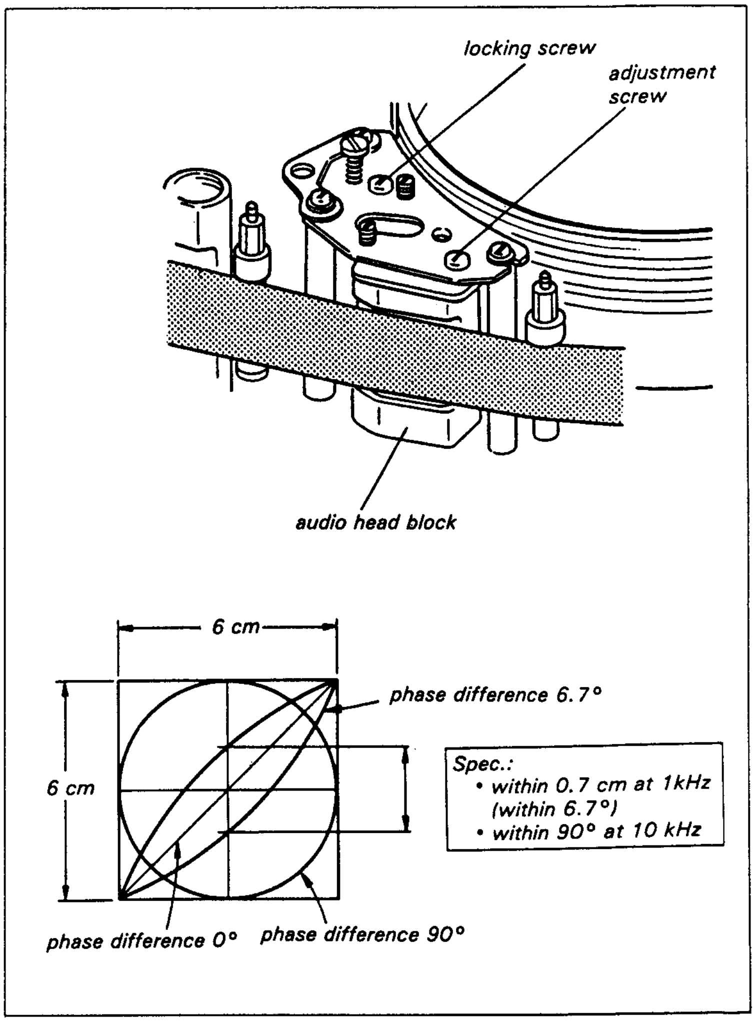
(1) Playback the audio 1 kHz signal portion of the alignment tape, and check that the vertical amplitude at the center in the horizontal direction meets the required specification.

(2) Playback the audio 10 kHz signal portion of the alignment tape, and check that the lissajous waveform meets the required specification.

Adjustment procedure:

(1) Loosen the locking screw 1/4 to 1/2 turn and adjust the phase by turning the adjustment screw.

(2) Tighten the locking screw and check the phase again.


locking screw
adjustment screw
audio head block
6 cm
6 cm
phase difference 6.7°
phase difference 0°
phase difference 90°

Spec.:
- *within 0.7 cm at 1kHz (within 6.7°)*
- *within 90° at 10 kHz*

7-7-7. Audio/CTL Head Position Adjustment

Tool: Alignment tape, RR5-2SC PAL
Oscilloscope

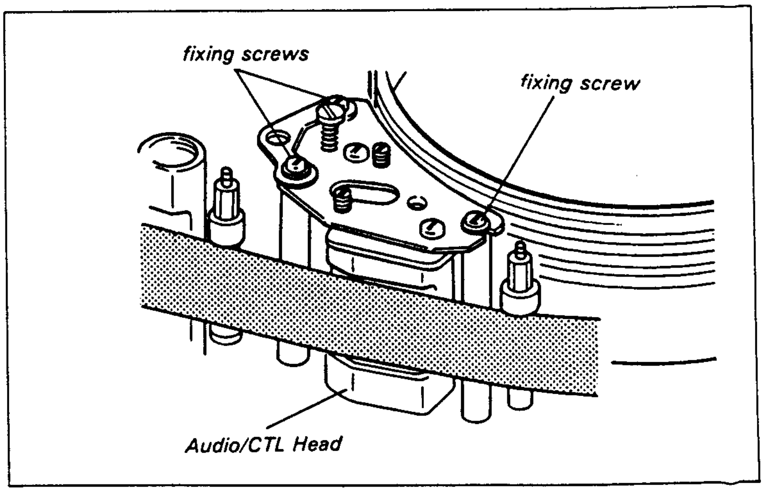
Preparation:

(1) Connect the oscilloscope to TP31 on the VO-19A Board and the EXT.TRIG to TP34 on the VO-19A Board.

(2) Playback the alignment tape.

Check procedure:

(1) While turning the TRACKING control knob, check that the RF envelope has maximum amplitude at the center detent position of the TRACKING control knob.


fixing screws
fixing screw
Audio/CTL Head

Adjustment procedure:

(1) Loosen the three fixing screws 1/4 to 1/2 turn.

(2) Adjust the position of the Audio/CTL Head with a eccentric screwdriver to meet the required specification.

7-8. VIDEO HEAD DIHEDRAL ADJUSTMENT

Tool: Dihedral adjustment screwdriver
Alignment tape, RR5-2SC PAL
Monitor TV

Check procedure

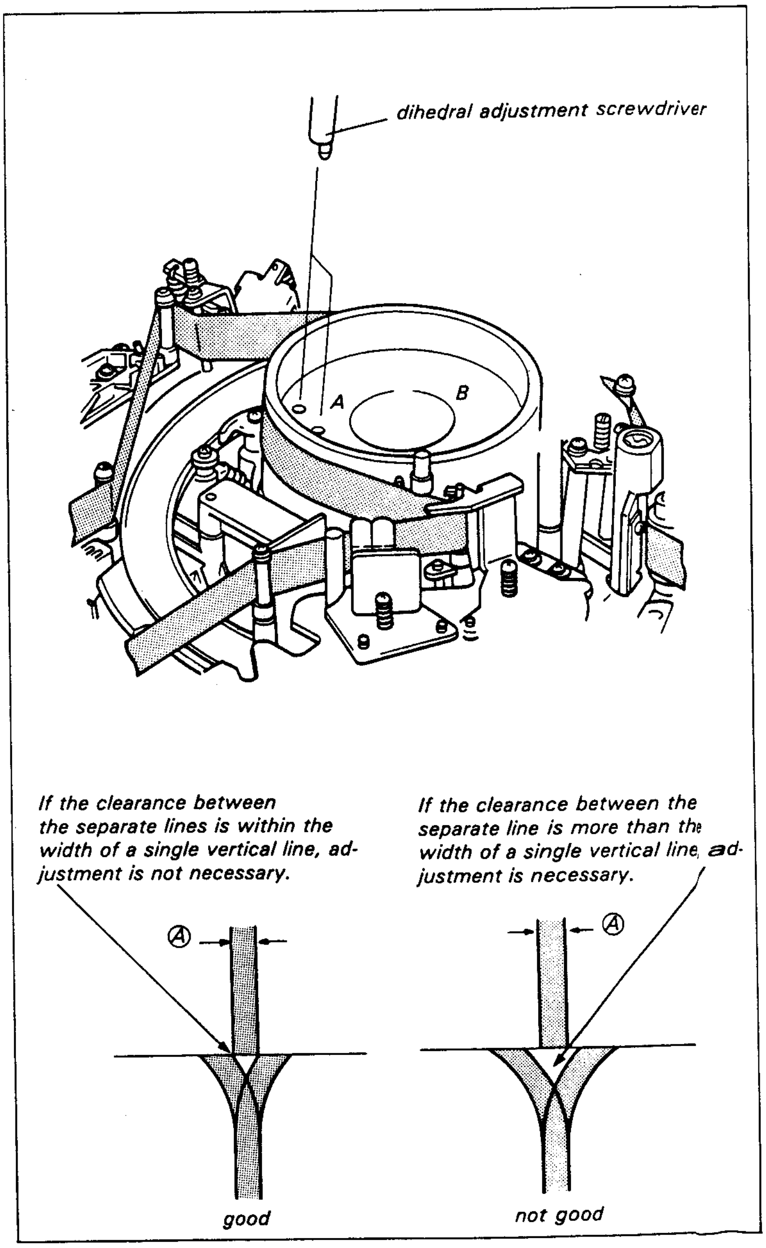
(1) Playback the monoscope signal portion of the alignment tape.

(2) Check the distortion of the monoscope signal under the switching pulse. If the clearance between the separate lines is within the width of a single vertical line, adjustment is not necessary. If the clearance of the separate lines is more than the width of a vertical line, then adjustment is necessary.

Adjustment procedure:

(1) Insert an eccentric screwdriver into the adjustment hole of the white lead and perform the dihedral adjustment.

(2) Play back the monoscope signal portion. If the distortion has become worse, insert an eccentric screwdriver in the other adjustment hole and perform the dihedral adjustment.



If the clearance between the separate lines is within the width of a single vertical line, adjustment is not necessary.

If the clearance between the separate line is more than the width of a single vertical line, adjustment is necessary.

SECTION 8

POWER SUPPLY/SYSTEM CONTROL ALIGNMENT

〔Equipment Required〕

- DC Voltmeter
- Alignment tape : RR5-2SC PAL (Part No.8-960-035-61)

8-1. SWITCHING REGULATOR ADJUSTMENT

8-1-1. REG+12V Adjustment

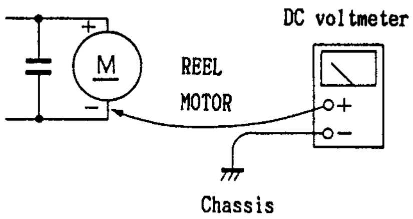
machine conditions for adjustment	specifications	adjustments
・Play back the color bar segment of the alignment tape.	CN201-1/UR-14(E) 12.1 ± 0.02 Vdc	⊘RV651/UR-14(E)

NOTE: If the REG 12V adjustment is attempted,re-alignment of the video system and servo system is required.
Do not attempt adjustment of the REG 12V power supply unless the units performance is obviously poor due to incorrect power supply voltage. If adjustments are made to the power supply, re-alignment of the video and servo systems is necessary.

8-2. TAPE SENSOR BALANCE ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Insert a cassette tape. · STOP mode	TP2/SY-106(J-2) 6.0 ± 0.2 Vdc	⊘RV1/SY-106(J-2)

8-3. REEL MOTOR STILL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· PLAY-PAUSE mode without inserting a cassette tape. · Check that the reel motor rotation stops.	Reel motor (+) side/RM-39  DC voltmeter + M REEL MOTOR − + − Chassis DC voltage = 400 ± 20 mV	⊘RV4/SY-106(H-2)

For reel torque adjustment, refer to Section 6.
RV3/SY-106··6-3. FWD Torque Adjustment
RV2/SY-106··6-4. REV Torque Adjustment

SECTION 9

SERVO SYSTEM ALIGNMENT

〔Equipment Required〕

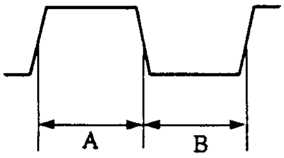
- Dual-trace Oscilloscope
- Frequency Counter
- AC Voltmeter
- Blank Tape: KCA, KCS
- Alignment Tape: RR5-2SC PAL(Part No.8-960-035-61) and RR5-3SA NTSC(Part No.8-960-015-04)

Real Time Counter (min.)	Tape Counter	Video Track	Audio Track
00:00 – 04:00	000 – 100	Monoscope	3 kHz, 0 dB
04:00 – 09:00	100 – 208	Color-bar	————
09:00 – 14:00	208 – 300	R-F sweep	————
14:00 – 16:00	300 – 335	Mod. 20T pulse	1 kHz, 0 dB
16:00 – 18:00	335 – 367	M.S. w/burst	10 kHz, – 10 dB
18:00 – 20:00	367 – 398	Pseudo C.B. for DOC adj.	————

9-1. CTL HEAD POSITION ADJUSTMENT

Refer to Section 7-7.

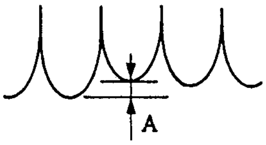
9-2. CAPSTAN FREE SPEED ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
NTSC · SYSTEM SELECT sw: NTSC · Play back the color bar segment of the alignment tape RR5-3SA.	TP3/SV-93G(G-4)  A = B ± 5 % (Take the reading at the center of the jitter.)	NTSC adj. ⊘RV100/SV-93G(G-4)
PAL · SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL.		PAL adj. ⊘RV105/SV-93G(G-4) TRIG: INT

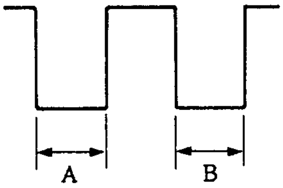
9-3. CAPSTAN SEARCH SPEED ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Short between TP3 and TPE1/ SY-106 with a shorting clip. · Play back the color bar segment of the alignment tape. · Set to the SEARCH FWD mode, and then press the PAUSE button and set to the SEARCH FWD-PAUSE mode. · Short between TP11 and E1/ SV-93G with a shorting clip. · Press the PAUSE button, and then set to the SEARCH FWD mode. · After the adjustment is completed, remove the shorting clips.	TP27/SV-93G(G-4) Frequency counter 60 ± 10 Hz	⊘RV101/SV-93G(H-5)

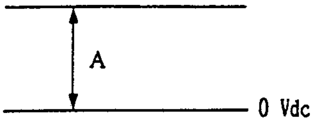
9-4. CAPSTAN STOP SERVO ADJUSTMENT (1)

machine conditions for adjustment	specifications	adjustments
· SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL. · Short between TP16 and TP19/SV-93G with a shorting clip. · After the adjustment is completed, remove the shorting clips.	TP21/SV-93G(H-6)  A ≤ 40 mVp-p	⊘RV106/SV-93G(I-5) TRIG: INT

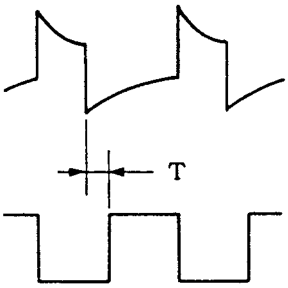
9-5. CAPSTAN FWD/REV DETECTION ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL.	TP25/SV-93G(G-6)  A = B ± 10 % (A+B = 1.1ms)	⊘RV201/SV-93G(I-5) TRIG: INT

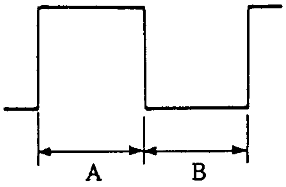
9-6. CAPSTAN STOP SERVO ADJUSTMENT (2)

machine conditions for adjustment	specifications	adjustments
· SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL, and set to the PAUSE mode. · Short between TP6 and TP22/SV-93G with a shorting clip. · After the adjustment is completed, remove the shorting clip.	TP26/SV-93G(E-3)  A = 1.0 ± 0.1 V	⊘RV107/SV-93G(H-4) TRIG: INT

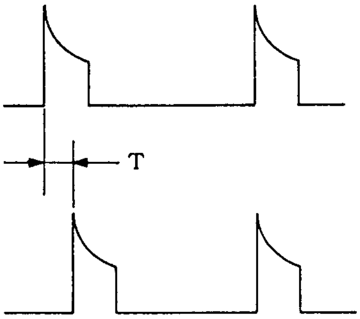
9-7. TRACKING MULTI ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
NTSC · SYSTEM SELECT sw: NTSC · Set the TRACKING control to the center click position. · Play back the color bar segment of the alignment tape RR5-3SA.	TP4/SV-93G(K-4)  TP9/SV-93G(K-4) T = 0 ± 100 μsec (Take the reading at the center of the jitter.)	NTSC adj. ⊘RV407/SV-93G(H-2)
PAL · SYSTEM SELECT sw: PAL · Set the TRACKING control to the center click position. · Play back the color bar segment of the alignment tape RR5-2SC PAL.		PAL adj. ⊘RV406/SV-93G(H-2) TRIG: INT(TP9/SV-93G)

9-8. DRUM FREE SPEED ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
NTSC · SYSTEM SELECT sw: NTSC · Play back the color bar segment of the alignment tape RR5-3SA.	TP15/SV-93G(E-2)  A = B± 5 %	NTSC adj. ⊘RV401/SV-93G(M-3)
PAL · SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL.		PAL adj. ⊘RV402/SV-93G(M-3) TRIG: INT

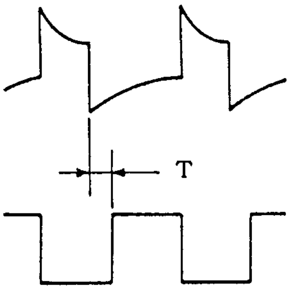
9-9. DRUM AFC LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
NTSC · SYSTEM SELECT sw: NTSC · Play back the color bar segment of the alignment tape RR5-3SA. · PB and PAUSE modes	TP8/SV-93G(K-2) PB mode  PAUSE mode T = 0± 0.1 μsec	⊘RV2/SV-93G(G-3)
PAL · SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL. · PB and PAUSE modes		⊘RV3/SV-93G(G-2)

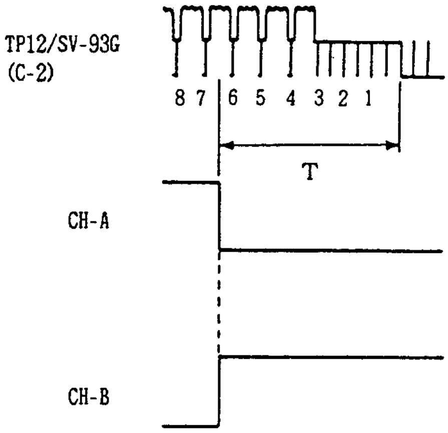
9-10. DRUM AFC TRANSIENT ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL. · PB and PAUSE modes	TP17/SV-93G(D-2) DC level in the PAUSE mode = Reference DC level in the PB mode = Reference± 0.1 Vdc	⊘RV1/SV-93G(F-2)

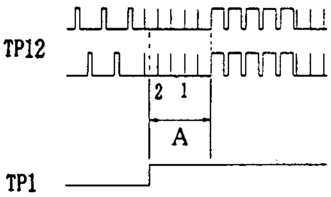
9-11. INSTANT START ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· SYSTEM SELECT sw: PAL · Set the TRACKING control to the center click position. · Play back the color bar segment of the alignment tape RR5-2SC PAL, and set to the PAUSE mode. · Short between TP11 and E1/SV-93G with a shorting clip. · Cancel the PAUSE mode · After the adjustment is completed, remove the shorting clip.	TP4/SV-93G(K-4)  TP9/SV-93G(K-4) T = 0 ± 1 msec (Take the reading at the center of the jitter.)	⊘RV102/SV-93G(H-3) TRIG: ING (TP9/SV-93G)

9-12. SWITCHING POSITION ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· SYSTEM SELECT sw: NTSC · Play back the color bar segment of the alignment tape RR5-3SA. · Short between TP8 and E501/SV-93G with a shorting clip. · Short between TP5 and E501/SV-93G with a shorting clip. · Set the TRACKING control to the center click position. ⇩	VIDEO OUT connector  TP12/SV-93G (C-2) 8 7 6 5 4 3 2 1 T CH-A CH-B T = 6.5 ± 0.5 H	CH-A: ⊘RV405/SV-93G(I-2) CH-B: ⊘RV403/SV-93G(L-3)
· SYSTEM SELECT sw: PAL · Play back the color bar segment of the alignment tape RR5-2SC PAL. · After the adjustment is completed, remove the shorting clips.		CH-B: ⊘RV404/SV-93G(L-3) TRIG: TP9/SV-93G(TV-V)

9-13. DRUM LOCK PHASE ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· VIDEO IN connector: color-bar · INPUT SELECT SW: LINE · Insert the KCA-60 tape. · Short between TP8(L-2),TP5(M-2) and E3(N-6)/SV-93G with shortig clips. · REC mode	TP12/SV-93G(C-2) TP1/SV-93G(N-4)  A = 2.25 ± 0.2 H	⊘RV401/SV-93G(N-5)
· After the adjustment is completed, remove the shorting clips.	· Change to the trigger(−) side of oscilloscope, and then confirm to meet the specification.	TRIG: TP1/SV-93G(N-4)

SECTION 10

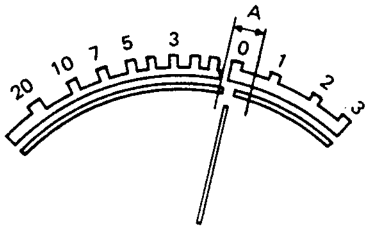
AUDIO SYSTEM ALIGNMENT

(Equipment Required)

- Dual Trace Oscilloscope
- Frequency Counter
- Audio Oscillator
- AC Volt Meter
- Audio Attenuator
- Blank Tape: KCA, KCS
- Alignment tape : RR5-2SC PAL (Part No.8-960-035-61)

Real Time Counter (min.)	Tape Counter	Video Track	Audio Track
00 : 00 − 04 : 00	000 − 100	Monoscope	3 kHz, 0 dB
04 : 00 − 09 : 00	100 − 208	Color-bar	————
09 : 00 − 14 : 00	208 − 300	R-F sweep	————
14 : 00 − 16 : 00	300 − 335	Mod. 20T pulse	1 kHz, 0 dB
16 : 00 − 18 : 00	335 − 367	M.S. w/burst	10 kHz, −10 dB
18 : 00 − 20 : 00	367 − 398	Pseudo C.B. for DOC adj.	————

10-1. AUDIO LEVEL METER ADJUSTMENT

machine conditions for adjustment	Specifications	Adjustments
· AUDIO LINE IN CH-1, CH-2: 1kHz, −10dBs · EE mode	AUDIO LEVEL meter  A = 0 ± 0.5 dBs	CH-1: ⊘RV51/AU-82B(C-4) CH-2: ⊘RV251/AU-82B(C-4)

10-2. LIMITER LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· MIC IN CH-1, CH-2: 1kHz, −60dBs · Set the input level to −30dBs with attenuator. · EE mode · AUDIO LIMITER SW: ON(Spec.1) · Set the input level to −60dBs with attenuator. · AUDIO LIMITER SW: OFF(Spec.2) · AUDIO LIMITER SW: ON(Spec.3) · AUDIO LIMITER SW: OFF · Pull out MIC IN connector.	CH-1 LINE OUT connector (terminated by 600Ω) CH-2 LINE OUT connector (terminated by 600Ω) Spec.1 : −2.0 ± 0.3 dBs Spec.2 : −5.0 ± 1.0 dBs(A) Spec.3 : A ± 0.2 dBs	CH-1: ⊘RV1/AU-82B(C-2) CH-2: ⊘RV201/AU-82B(D-2)

10-3. ALIGNMENT TAPE PB FREQUENCY RESPONSE ADJUSTMENT

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr>
<td>· Play back the audio 1kHz, 3kHz and 10kHz segments of the alignment tape RR5-2SC PAL.</td>
<td>CH-1 LINE OUT connector (terminated by 600Ω)
CH-2 LINE OUT connector (terminated by 600Ω)
<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>1 kHz</td><td>REF(AdB)</td></tr>
<tr><td>3 kHz</td><td>A±1.5 dB</td></tr>
<tr><td>10 kHz</td><td>A±1.0 dB</td></tr>
</table>
</td>
<td>CH-1:
· 3kHz Level
⊘RV101/AU-82B(J-4)
· 10kHz Level
⊘RV102/AU-82B(J-2)
CH-2:
· 3kHz Level
⊘RV302/AU-82B(H-4)
· 10kHz Level
⊘RV303/AU-82B(H-1)</td>
</tr>
</table>

10-4. ALIGNMENT TAPE PB LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the audio 1kHz, 0dB segment of the alignment tape RR5-2SC PAL.	CH-1 LINE OUT connector CH-2 LINE OUT connector − 5.0 ± 0.2 dBs	CH-1: ⊘RV103/AU-82B(J-2) CH-2: ⊘RV304/AU-82B(J-1)

10-5. FULL ERASE OSC. FREQUENCY/LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
・MIC IN connector: terminated by 600Ω ・Insert the KCA-60 tape. ・REC mode ・Solder C613 on SLIT/AU-82B(A-3,4) and then read the frequency at this time. ・Calculate the difference between this frequency and the specification, and then solder C610 to C613. Adjust so as to meet the specification.	TP601/AU-82B(A-5) GND: E601/AU-82B(A-5) Frequency: 71 ± 2 kHz Level: 300 ± 10 mVrms	⊘RV604/AU-82B(A-1)

10-6. AUDIO ERASE OSC. FREQUENCY ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
・MIC IN connector: terminated by 600Ω ・Insert the KCA-60 tape. ・REC mode	TP602/AU-82B(B-5) E601/AU-82B(A-1) Frequency: 71 ± 0.2 kHz	⊘LV601/AU-82B(B-4)

10-7. REC BIAS VOLTAGE ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
・MIC IN connector: terminated by 600Ω ・Insert the KCA-60 tape. ・REC mode	CH-1: TP101/AU-82B(J-5) GND: TP102/AU-82B(J-5) CH-2: TP301/AU-82B(H-5) GND: TP302/AU-82B(H-5) 10.0 ± 0.5 mVrms	CH-1: ⊘RV601/AU-82B(B-4) CH-2: ⊘RV602/AU-82B(B-4)

10-8. BIAS TRAP ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· MIC IN connector: terminated by 600Ω · Insert the KCA-60 tape. · REC mode	CH-1: TP152/AU-82B(J-5) GND: E151/AU-82B(H-6) CH-2: TP352/AU-82B(H-5) GND: E151/AU-82B(H-6) Minimize the level. (less than −35 dBs)	CH-1: ⊘LV151/AU-82B(J-5) CH-2: ⊘LV351/AU-82B(H-5) · Adjust from the component side.

10-9. REC LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· AUDIO LINE IN CH-1, CH-2: 1kHz, −30dB · REC mode · Short between TP603/AU-82B(B-2) and E601/AU-82B(A-5) with a shorting clip. · After the adjustment is completed, remove the shorting clip.	CH-1: TP152/AU-82B(J-5) GND: E151/AU-82B(H-6) CH-2: TP352/AU-82B(H-5) GND: E151/AU-82B(H-6) −17 ± 1 dBs	CH-1: ⊘RV152/AU-82B(K-2) CH-2: ⊘RV352/AU-82B(G-2)

10-10. DUB DUMMY COIL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· MIC IN connector: terminated by 600Ω · Insert the KCA-60 tape. · REC mode (This frequency is A.) · DUB mode	TP602/AU-82B(A-5) E601/AU-82B(A-5) DUB Frequency: A ± 0.2 kHz DUB Level: 230 ± 30 mVms	⊘LV602/AU-82B(A-4)

10-11. DUB BIAS TRAP ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· MIC IN connector: terminated by 600Ω · Insert the KCA-60 (no signal) tape. · DUB mode	TP303/AU-82B(G-3) GND : E151/AU-82B(H-6) Minimize the level. (less than −18 dBs)	⊘LV301/AU-82B(H-5) (Adjust from the component side.)

10-12. CROSSTALK CANCELER ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· LINE IN CH-1, CH-2: 5kHz, −10dBs · Insert the KCA-60 tape which has almost erased audio signal. · DUB mode · Insert the KCA-60(no signal) tape. · DUB mode	CH-1 LINE OUT connector (terminated by 600Ω) −5 dBs CH-2 LINE OUT connector (terminated by 600Ω) Minimize the level. (less than −27 dBs)	⊘RV301/AU-82B(K-4)

10-13. CH-1 REC EQ ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
Step 1. ・AUDIO LINE IN CH-1, CH-2: 1kHz, −30dBs ・Turn RV151/AU-82B(K-3) fully clockwise. ・Insert the KCA-60 tape. ・REC mode ・Read the indication of the AC volt meter as A.	TP152/AU-82B(J-5) GND: E151/AU-82B(H-6)	
Step 2. ・Change the OSC frequency to 1kHz→21kHz. ・After the adjustment is completed, remove the shorting clip.	TP152/AU-82B(J-5) Maximize the level. (A + 20 ± 0.5 dB)	⊘LV152/AU-82B(K-3) (Adjust from the component side.) ⊘RV151/AU-82B(K-3)

10-14. CH-2 REC EQ ADJUSTMENT

Conditions for adjustment	Specifications	Adjustments
Step 1. · AUDIO LINE IN CH-1, CH-2: 1kHz, −30dBs · Turn RV351/AU-82B (G-2) fully clockwise. · Insert the KCA-60 tape. · REC mode · Read the indication of the AC volt meter as A.	TP352/AU-82B (H-5) GND: E151/AU-82B (H-6)	
Step 2. · Change the OSC frequency to 1kHz→21kHz. · After the adjustment is completed, remove the shorting clip.	TP352/AU-82B (H-5) Maximize the level. (A + 20 ± 0.5 dB)	⊘LV352/AU-82B (G-2) (Adjust from the component side.) ⊘RV351/AU-82B (G-2)

10-15. CH-1 OVERALL FREQUENCY RESPONSE ADJUSTMENT

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr>
<td>・AUDIO LINE IN: 40Hz,90Hz,1kHz, 3kHz,7kHz,10kHz,15kHz, −16dB
・Insert the KCA-60 tape.
・REC mode
・Record each frequency for 15 seconds.
・Rewind and Play back the recorded portion.</td>
<td>CH-1 LINE OUT connector (terminated by 600Ω)
<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>40 Hz</td><td>0 ± 3 dB</td></tr>
<tr><td>90 Hz</td><td>0 ± 2 dB</td></tr>
<tr><td>1 kHz</td><td>0 dB (REF)</td></tr>
<tr><td>3 kHz</td><td>−0.3 ± 0.7 dB</td></tr>
<tr><td>7 kHz</td><td>−0.5 ± 0.7 dB</td></tr>
<tr><td>10 kHz</td><td>−0.7 ± 1.0 dB</td></tr>
<tr><td>15 kHz</td><td>−1.6 ± 1.0 dB</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td></td>
<td>When 7~15 kHz doesn't meet the specification:
1. CH-1, CH-2 MIC IN connector: terminated by 600Ω
2. Connect the AC volt meter to TP101/AU-82B(J-5) (GND: TP102/AU-82B(J-5)).
3. Insert the KCA-60 tape.
4. REC mode
5. Readjust the bias at RV601/AU-82B(B-4). bias voltage: 8~15mVrms
NOTE: When the high frequency is lower than the specification, lower the bias voltage.
6. REC/PB and then confirm that the frequency response meets the specification.

When 15kHz doesn't meet the specification:
1. Connect the AC volt meter to TP152/AU-82B(J-2). (GND: E151/AU82B(H-6))
2. LINE IN CH-1 connector: 15kHz, −30dB
3. Insert the KCA-60 tape.
4. REC mode. Read the indication of the AC volt meter(A).
5. Readjust to add or remone to A for which doesn't meet the specification at RV151/AU-82B(K-3).
6. REC/PB and confirm that the frequency response meets the specification.</td>
<td></td>
</tr>
</table>

10-16. CH-2 OVERALL FREQUENCY RESPONSE ADJUSTMENT

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr>
<td>・AUDIO LINE IN: 40Hz, 90Hz, 1kHz, 3kHz, 7kHz, 10kHz, 15kHz, −16dB
・Insert the KCA-60 tape.
・DUB mode
・Record each frequency for 15 seconds.
・Rewind and Play back the recorded portion.</td>
<td>CH-2 LINE OUT connector (terminated by 600Ω)
<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>40 Hz</td><td>0 ± 3 dB</td></tr>
<tr><td>90 Hz</td><td>0 ± 2 dB</td></tr>
<tr><td>1 kHz</td><td>0 dB (REF)</td></tr>
<tr><td>3 kHz</td><td>−0.3 ± 0.7 dB</td></tr>
<tr><td>7 kHz</td><td>−0.5 ± 0.7 dB</td></tr>
<tr><td>10 kHz</td><td>−0.7 ± 1.0 dB</td></tr>
<tr><td>15 kHz</td><td>−1.6 ± 1.0 dB</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td></td>
<td>When 7~15 kHz doesn't meet the specification:
1. CH-1, CH-2 MIC IN connector: terminated by 600Ω
2. Connect the AC volt meter to TP301/AU-82B(H-5) (GND: TP302/AU-82B(H-5)).
3. Insert the KCA-60 tape.
4. REC mode
5. Readjust the bias at RV602/AU-82B(B-4).
bias voltage: 8~15mVrms
NOTE: When the high frequency is lower than the specification, lower the bias voltage.
6. REC/PB and then confirm that the frequency response meets the specification.

When 15kHz doesn't meet the specification:
1. Connect the AC volt meter to TP352/AU-82B(H-2).
2. Insert the KCA-60 tape.
3. REC mode. Read the indication of the AC volt meter(A).
4. Readjust to add or remove to A for which doesn't meet the specification at RV352/AU-82B(G-2).
5. REC/PB and confirm that the frequency response meets the specification.</td>
<td></td>
</tr>
</table>

10-17. DUB OVERALL FREQUENCY RESPONSE ADJUSTMENT

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr>
<td>・AUDIO LINE IN: 40Hz, 90Hz, 1kHz, 3kHz, 7kHz, 10kHz, 15kHz, −16dB
・Insert the KCA-60 tape.
・DUB mode
・Record each frequency for 15 seconds.
・Rewind and Play back the recorded portion.</td>
<td>CH-1 LINE OUT connector
<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>40 Hz</td><td>0 ± 3 dB</td></tr>
<tr><td>90 Hz</td><td>0 ± 2 dB</td></tr>
<tr><td>1 kHz</td><td>0 dB (REF)</td></tr>
<tr><td>3 kHz</td><td>$0^{+0.4}_{-1.0}$ dB</td></tr>
<tr><td>7 kHz</td><td>$0^{+0.2}_{-1.0}$ dB</td></tr>
<tr><td>10 kHz</td><td>$0^{+0.3}_{-1.7}$ dB</td></tr>
<tr><td>15 kHz</td><td>$-1^{+0.4}_{-1.6}$ dB</td></tr>
</table>
</td>
<td></td>
</tr>
</table>

NOTE: When not to meet the specification, perform Sec. 10-10 DUB DUMMY COIL ADJUSTMENT.

10-18. REC/PB LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
・AUDIO LINE IN CH-1,CH-2: 1kHz, −10dB terminated by 600Ω ・Insert the KCA-60 tape. ・REC mode	TP101/AU-82B(J-5) GND: TP102/AU-82B(J-5) 9.0 ± 0.5 mVrms	⊘RV603/AU-82B(A-1)
Step 1. ・Rewind and play back the recorded portion. ・Read the demonstrative value of AC volt meter and compare with the specification. ・When not to meet the specification, perform step 2.	CH-1 LINE OUT connector (terminated by 600Ω) CH-2 LINE OUT connector (terminated by 600Ω) − 5.0 ± 0.3 dBs	CH-1: ⊘RV152/AU-82B(K-2) CH-2: ⊘RV352/AU-82B(G-2)
Step 2. ・REC mode ・Read the level at TP152 and adjust for the difference with the specification of Step 1 at RV152. ・Adjust at RV352 with the same way.	TP152/AU-82B(J-5) GND: E151/AU-82B(H-6) TP352/AU-82B(H-5) GND: E151/AU-82B(H-6)	

SECTION 11

VIDEO SYSTEM ALIGNMENT

The sec 9. SERVO SYSTEM ALIGNMENT should be completed before initiating this Alignment.

〔Equipment Required〕

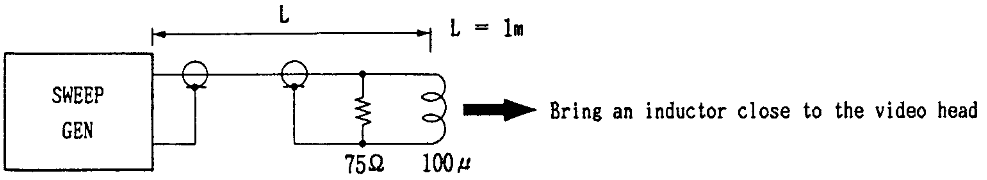
- Dual trace Oscilloscope
- Frequency Counter
- Video Signal Generator
- Video Sweep Generator
- DC Voltmeter
- Vectorscope
- Blank Tape: KCA,KCS
- Alignment tape : RR5-2SC PAL (Part No.8-960-035-61)

Real Time Counter (min.)	Tape Counter	Video Track	Audio Track
00 : 00 − 04 : 00	000 − 100	Monoscope	3 kHz, 0 dB
04 : 00 − 09 : 00	100 − 208	Color-bar	———
09 : 00 − 14 : 00	208 − 300	R-F sweep	———
14 : 00 − 16 : 00	300 − 335	Mod. 20T pulse	1 kHz, 0 dB
16 : 00 − 18 : 00	335 − 367	M.S. w/burst	10 kHz, −10 dB
18 : 00 − 20 : 00	367 − 398	Pseudo C.B. for DOC adj.	———

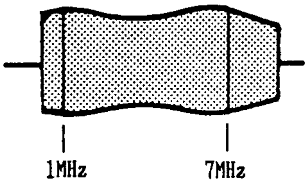
11-1. Y PB RF ADJUSTMENT

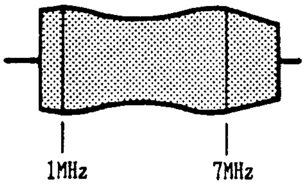
11-1-1. PB Pre-Amplifier Adjustment

To make this adjustment, stop the rotation of the head drum without cassette tape and to L-couple sweep signal with the video head using an inductor (approx. 100μH).



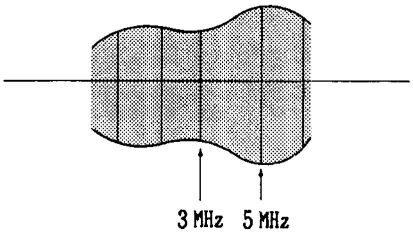
Sweep signal band width: 1 to 10 MHz

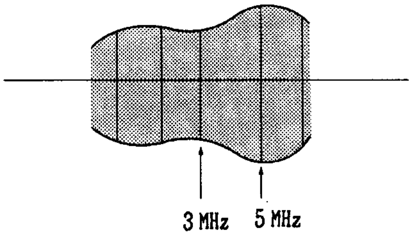
<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr><td>Step 1. CH-A frequency adjustment
· Short between TP34/VO-19A(K-9) and E14/VO-19A(K-9) with a shorting clip.
· POWER ON.
· Couple a sweep signal with the video head (CH-A).
· Adjust coupling so that the amplitude is maximized.
· After the adjustment is completed, remove the shorting clip.</td>
<td>TP7/RP-36A(A-1)


<table><tr><td>1MHz</td><td>7MHz</td></tr><tr><td>100%
(REF)</td><td>100± 5 %</td></tr></table></td>
<td>⊘RV4/RP-36A(C-6)
TRIG:TRIG OUT of SWEEP GEN</td></tr>
<tr><td>Step 2. CH-B frequency adjustment
· Short between TP34/VO-19A(K-9) and TP33/VO-19A(K-7) with a shorting clip.
· POWER ON.
· Couple a sweep signal with the video head (CH-B).
· Adjust coupling so that the amplitude is maximized.
· After the adjustment is completed, remove the shorting clip.</td>
<td>TP10/RP-36A(B-2)


<table><tr><td>1MHz</td><td>7MHz</td></tr><tr><td>100%
(REF)</td><td>100± 5 %</td></tr></table></td>
<td>⊘RV6/RP-36A(A-6)
TRIG:TRIG OUT of SWEEP GEN</td></tr>
</table>

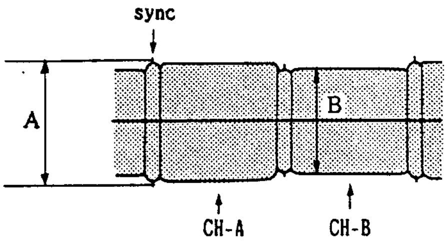
11-1-2. PB RF Frequency Response Adjustment (Middle)

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr>
<td>Step 1.
· Short between TP34/VO-19A(K-9) and E14/VO-19A(K-9) with a shorting clip.
· Set the sweep output so that the signal level is 1mVp-p.
· Couple a sweep signal with the video head (CH-A)
· Adjust coupling so that the amplitude is maximized.
· After the adjustment is completed, remove the shorting clip.</td>
<td>CH-A: TP31/VO-19A(L-6)


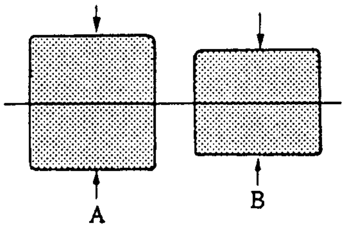
<table><tr><th>3MHz</th><th>5MHz</th></tr><tr><td>100%
(REF)</td><td>140±10%</td></tr></table></td>
<td>⊘RV20/VO-19A(K-8)</td>
</tr>
<tr>
<td>Step 2.
· Short between TP34/VO-19A(K-9) and TP33/VO-19A(L-7) with a shorting clip.
· Couple a sweep signal with the video head (CH-B)
· Adjust coupling so that the amplitude is maximized.
· After the adjustment is completed, remove the shorting clip.</td>
<td>CH-B: TP31/VO-19A(L-6)


<table><tr><th>3MHz</th><th>5MHz</th></tr><tr><td>100%
(REF)</td><td>140±10%</td></tr></table></td>
<td>⊘RV21/VO-19A(K-8)
TRIG: TRIG OUT of SWEEP GEN</td>
</tr>
</table>

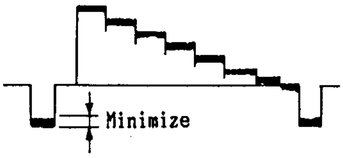
11-1-3. PB Y RF Channel Balance/Level Adjustment

machine conditions for adjustment	specifications	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL. · Turn the TRACKING volume and maximize the wave. · After the adjustment is completed, set the TRACKING volume to the center.	TP30/VO-19A(H-8) (E13/VO-19A(J-6))  Blance : A = 100% B = 100 ± 10% Level : A = B= 0.3 ± 0.03 Vp-p	Balance: ⊘RV18/VO-19A(K-7) Level: ⊘RV17/VO-19A(K-7) TRIG: EXT TP34/VO-19A(K-9)

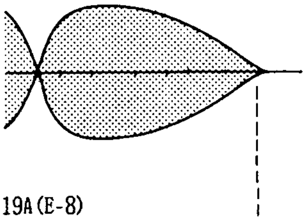
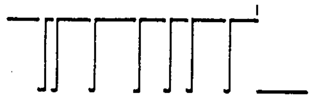
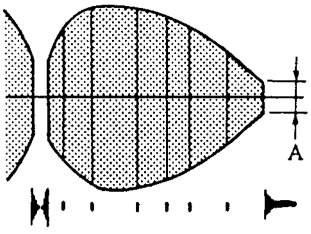
11-2. PB CHROMA RF CHANNEL BALANCE ADJUSTMENT

machine conditions for adjustment	specification	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL. · Turn the TRACKING volume and maximise the wave. · After the adjustment is completed, set the TRACKING volume to the center.	TP2/CO-12(G-3)  Spec.1 : A = 100% B = 100 ± 5% Spec.2 : A = 0.2 ± 0.02 Vp-p	Spec.1 : ⊘RV19/VO-19A(K-8) Spec.2 : ⊘RV15/VO-19A(G-6) TRIG: EXT TP34/VO-19A(K-9)

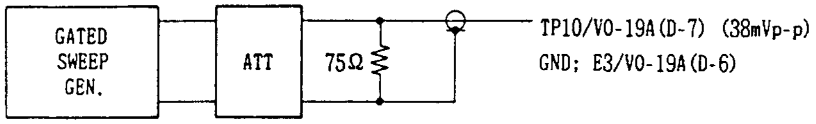
11-3. CARRIER BALANCE ADJUSTMENT

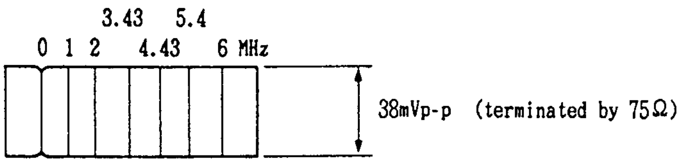
machine conditions for adjustment	specifications	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL.	TP26/VO-19A(L-6) (E10/VO-19A(K-5)) 	⊘RV16/VO-19A(J-6) TRIG: INT

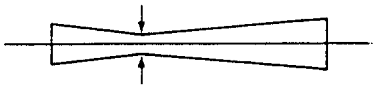
11-4. DROPOUT COMPENSATOR SENSITIVITY ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the RF sweep segment of the alignment tape RR5-2SC PAL. · Short between TP8/SV-93G(L-6) and E3/SV-93G(N-6) with a shorting clip. · After the adjustment is completed, remove the shorting clip.	CH-1: TP30/VO-19A(H-8)  CH-2: TP28/VO-19A(E-8)  oscilloscope: ADD mode  A = 0.03 ± 0.004 Vp-p	⊘RV14/VO-19A(E-8) TRIG: EXT

11-5. NOISE CANCELLER ADJUSTMENT

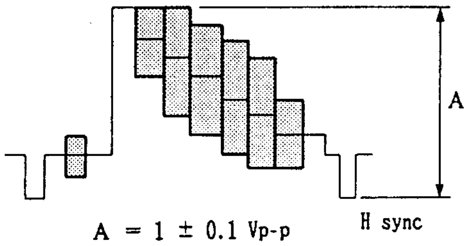

GATED
SWEEP
GEN.
ATT
75Ω
TP10/VO-19A(D-7) (38mVp-p)
GND; E3/VO-19A(D-6)


LOCKED SWEEP INPUT LEVEL
3.43
5.4
0
1
2
4.43
6 MHz
38mVp-p (terminated by 75Ω)

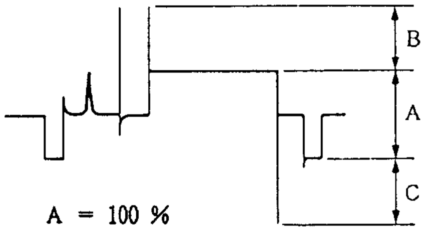
machine conditions for adjustment	specifications	adjustments
· Short between TP9/VO-19A(D-6) and E3/VO-19A(D-6) with a shorting clip. · Connect the LOCKED SWEEP to TP10 /VO-19A(D-7) and E3/VO-19A(D-6) as shown in above. · After the adjustment is completed, remove the shorting clip.	TP11/VO-19A(E-6)  Minimize the level.	⊘RV4/VO-19A(D-6)

11-6. MODULATOR ADJUSTMENT

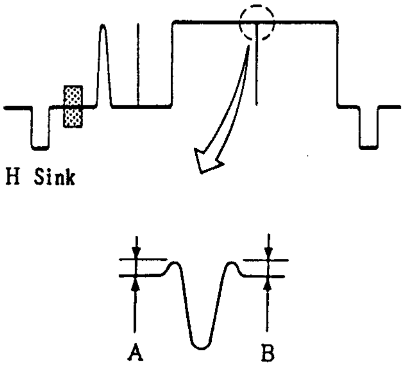
11-6-1. FM Deviation Adjustment

machine conditions for adjustment	specifications	adjustments
· Adjust repeating REC/PB mode. · VIDEO IN: color-bar	VIDEO OUT connector (terminated by 75Ω)  A = 1 ± 0.1 Vp-p	⊘RV1/VO-19A(G-3) TRIG: INT

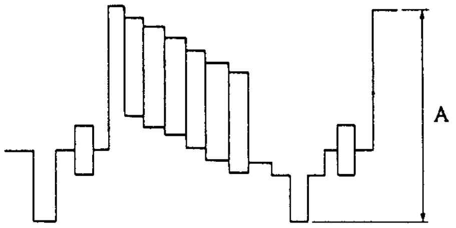
11-6-2. White/Dark Clip Adjustment

machine conditions for adjustment	specifications	adjustments
· Insert the KCA-60 tape. · EE mode · VIDEO IN: pulse & bar	TP301/VO-19A(H-4) (E1/VO-19A(K-3))  A = 100 % B = 60 ±5% C = 60 ±5%	Spec B: ⊘RV302/VO-19A(K-4) Spec C: ⊘RV303/VO-19A(J-4) TRIG: INT

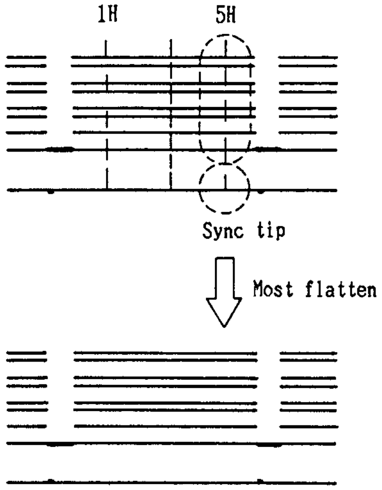
11-7. PB Y PHASE EQUALIZE ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
• Play back the Mod 20T pulse segment of the alignment tape RR5-2SC PAL. • After the adjustment is completed, remove the shorting clip.	TP11/VO-19A(E-7) (E11/VO-19A(F-8))  A = B	⊘RV12/VO-19A(K-5) TRIG: TP9/CO-12(E-5)

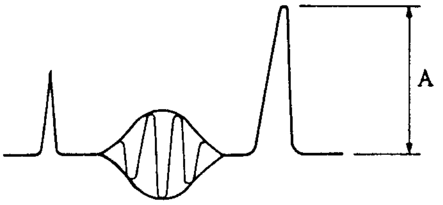
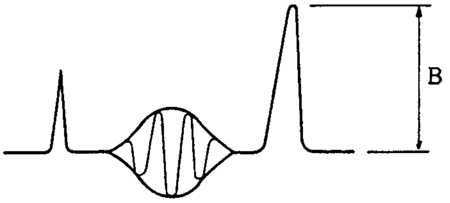
11-8. PB Y OUTPUT LEVEL PRE-ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
• Play back the color-bar segment of the alignment tape RR5-2SC PAL.	TP11/VO-19A(E-6)  A = 1.7 ± 0.1 Vp-p	⊘RV204/VO-19A(G-3) TRIG: TP206/VO-19A(J-4)

11-9. DROPOUT COMPENSATOR CIRCUIT LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the Pseudo CB for DOC adjustment segment of the alignment tape RR5-2SC PAL. · Turn RV9/VO-19A fully right. · Turn RV8/VO-19A(C-9) and fit the white peak level of 5H to the one of normal(A). · Turn RV9 and flatten the sync of wave(B). · Adjust(A) and (B) repeatedly so as not to be difference in level. · EJECT	TP11/VO-19A(F-7) 	⊘RV9/VO-19A(E-7) ⊘RV8/VO-19A(C-9) TRIG: EXT TP34/VO-19A(K-9)

11-10. CORRELATOR INPUT LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· VIDEO IN: color-bar. · EE mode	TP310/CO-12(B-8) 	⊘RV302/CO-12(B-8)
	TP308/CO-12(B-8): INV mode TP309/CO-12(B-8)  B = A ± 20 mV	⊘RV303/CO-12(B-8) TRIG: EXT TP8/CO-12(F-6)

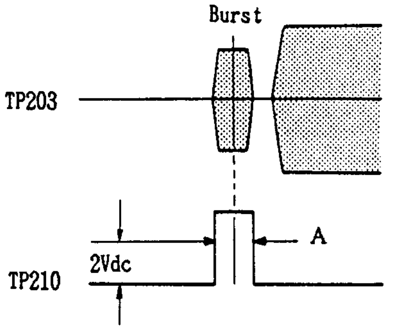
11-11. REC REF OSC ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· VIDEO IN: color-bar · Press the REC button. · EE mode	TP9/CO-12(E-4) 4,433,619 ± 5 Hz	⊘CV1/CO-12(J-1)

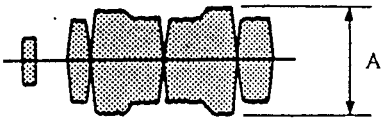
11-12. VCO DC LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL.	TP12/CO-12(D-3) DC Level = 8.1 ± 0.1 V Confirm the HUE of color-bar on the monitor is correct.	⊘RV7/CO-12(E-6)

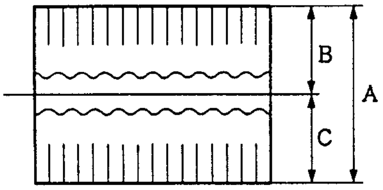
11-13. ACC BURST GATE WIDTH/PHASE ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL.	TP6/CO-12(G-2) TP14/CO-12(D-7)  A = 2.6 ± 0.1 μs Adjust the center of both waves.	Pulse width: ⊘RV9/CO-12(E-7) Phase: ⊘RV10/CO-12(E-8) TRIG: INT TP8/CO-12(F-6)

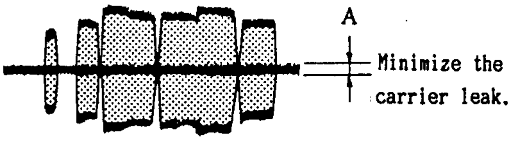
11-14. PB ACC INPUT ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL.	TP3/CO-12(G-3)  A = 0.8 ± 0.05 Vp-p	⊘RV6/CO-12(D-4) TRIG: EXT TP8/CO-12(F-6)

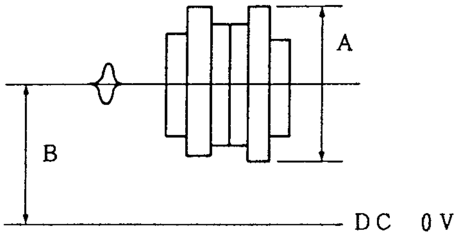
11-15. APC GAIN ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL. · Short between TP11/CO-12(D-5) and E4/CO-12(F-6) with a shorting clip. · After the adjustment is completed, remove the shorting clip.	TP12/CO-12(D-3)  A = 1.0 ± 0.1 Vp-p B = 100% (REF) C = 100 ± 10%	⊘RV8/CO-12(D-7) TRIG: EXT

11-16. CONVERTER BALANCE ADJUSTMENT

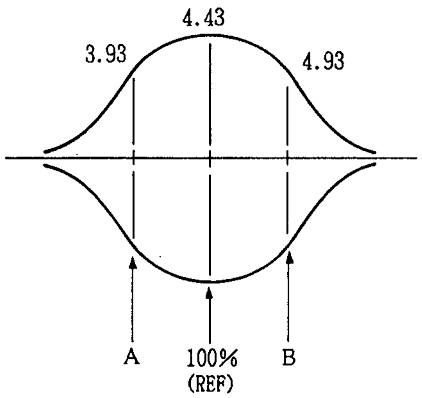
machine conditions for adjustment	specifications	adjustments
· Play back the color-bar segment of the alignment tape RR5-2SC PAL.	TP6/CO-12(G-2)  (A ≦ 0.03 Vp-p)	⊘RV2/CO-12(F-2) TRIG: EXT TP8/CO-12(F-6)

11-17. DUB CHROMA OUTPUT LEVEL ADJUSTMENT

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr><td>· VIDEO IN : color-bar
· Play back the color-bar segment of the alignment tape RR5-2SC PAL.</td><td>TP5/CO-12(J-4)


A = 1.0 ± 0.1 Vp-p
B = 8.0 ± 0.5 V_{DC}</td><td>⊘RV5/CO-12(J-5)
⊘RV4/CO-12(K-6)
TRIG: EXT
TP8/CO-12(F-6)</td></tr>
</table>

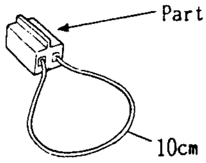
11-18. EE CHROMA OUT FREQUENCY ADJUSTMENT

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr><td>· SYSTEM SELECT SW : SECAM
· VIDEO IN: gated sweep with burst.
· EE mode
· SYSTEM SELECT SW : PAL</td><td>TP307/CO-12(C-4)


Frequency Level
<table><tr><th>Frequency</th><th>Level</th></tr><tr><td>3.93 MHz</td><td>75 ± 10 %</td></tr><tr><td>4.43 MHz</td><td>100 % (REF)</td></tr><tr><td>4.93 MHz</td><td>75 ± 10 %</td></tr></table></td><td>⊘T301/CO-12(B-5)</td></tr>
</table>

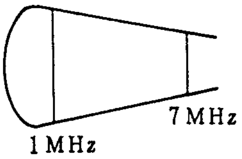
11-19. REC CURRENT ADJUSTMENT

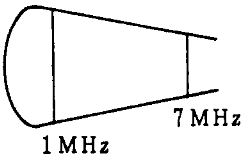
11-19-1. REC Current Frequency Response Adjustment



Part No. : 1-509-983-00
HOUSING, IL CONNECTOR 2P
NOTE: Cut the projection
with the cutter.

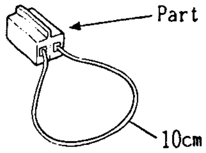
(Junction Connector)

<table>
<tr><th>machine conditions for adjustment</th><th>specifications</th><th>adjustments</th></tr>
<tr>
<td>· Connect the junction connector to CP1/RP-36A(A-3) and CP2/RP-36A (A-3).
· Short between TP8/VO-19A(J-5) and E2/VO-19A(K-4) with a shorting clip.
Step 1.
· Short between TP3/RP-36A(A-7) and E1/RP-36A(A-7) with a shorting clip.
· Connect the sweep signal to TP4/ RP-36A(A-6) and E1/RP-36A(A-7).
· Insert the KCA-60 tape.
· REC mode.
· Connect the current prove to CP2 /RP-36A(A-3) and adjust SG so that 1MHz level can be 60mAp-p.</td>
<td>

<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>1MHz</td><td>100 %</td></tr>
<tr><td>7MHz</td><td>60 ± 5%</td></tr>
</table>
Adjust RV3 so that the 7MHz level can be meet the specification.
Pay attention to change the 1MHz level when adjust RV3.</td>
<td>⊘RV3/RP-36A(A-4)</td>
</tr>
<tr>
<td>Step 2.
· Short between TP3/RP-36A(A-7) and E1/RP-36A(A-7) with a shorting clip.
· Connect the current prove to CP1 /RP-36A(A-3) and adjust SG so that 1MHz level can be 60mAp-p.
· Insert the KCA-60 tape.
· REC mode.
· After the adjustment is completed, remove the shorting clip.</td>
<td>

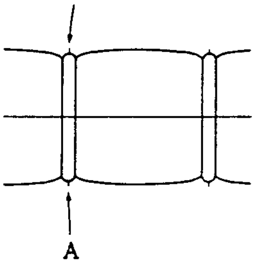
<table>
<tr><th>Frequency</th><th>Level</th></tr>
<tr><td>1MHz</td><td>100 %</td></tr>
<tr><td>7MHz</td><td>60 ± 5%</td></tr>
</table></td>
<td>⊘RV5/RP-36A(B-4)
TRIG: EXT
SWEEP TRIG</td>
</tr>
</table>

11-19-2. REC Current Level Adjustment

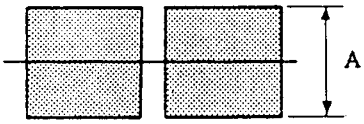


Part No. : 1-509-983-00
HOUSING, IL CONNECTOR 2P
NOTE: Cut the projection
with the cutter.

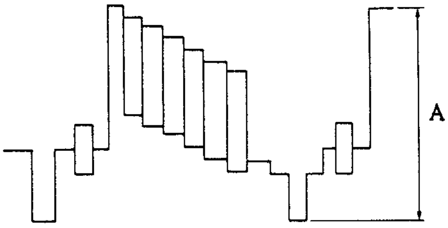
(Junction Connector)

machine conditions for adjustment	specifications	adjustments
· VIDEO IN: color-bar · Insert the KCA-60 tape. · REC mode		
Step 1. · Connect the junction connector of CP2/RP-36A(A-3) and then connect the current prove to it. Step 2. · Connect the junction connector of CP1/RP-36A(A-3) and then connect the current prove to it. · Insert the caps to CP1 and CP2.	 A = 70 ± 5 mA	⊘RV2/RP-36A(A-8)

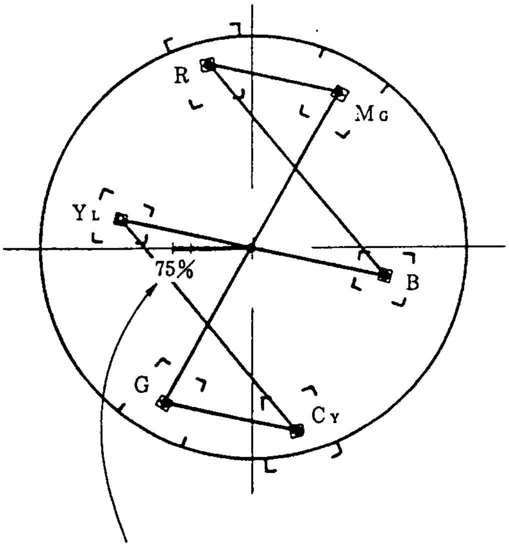
11-19-3. Chroma REC Current Level Adjustment

machine conditions for adjustment	specifications	adjustments
· VIDEO IN: color-bar · Insert the KCA-60 tape. · REC mode · Short between E1/VO-19A(K-3) and TP8/VO-19A(J-5) with a shorting clip. · Connect the junction connector of CP2/RP-36A(A-3) and then, connect the current prove to it. · After the adjustment is completed, remove the shorting clip.	CP2/RP-36A(A-3) TP2/CO-12(G-2)  A= 16.5 ± 5 mA Chroma level of TP2/CO-12(G-2) after REC/PB = 200 ± 10 mVp-p	⊘RV1/RP-36A(A-7) TRIG: TP2/CO-12(G-3)

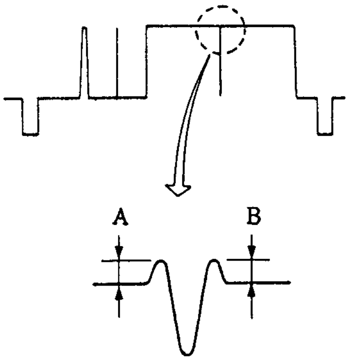
11-20. OA Y VIDEO OUT LEVEL ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· VIDEO IN: color-bar · Insert the KCA-60 tape. · REC mode · VIDEO OUT: terminated by 75Ω. · PB mode	VIDEO OUT connector  A = 1 ± 0.05 Vp-p	REC mode: ⊘RV6/VO-19A(E-4) PB mode: ⊘RV204/VO-19A(G-3) TRIG: INT

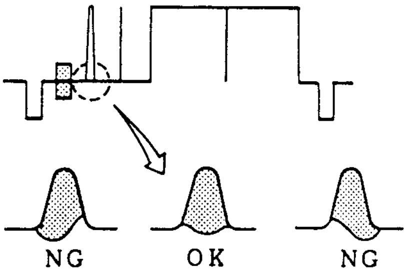
11-21. Y/C MIX ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· VIDEO IN: color-bar · Insert the KCA-60 tape. · REC/PB mode	VIDEO OUT connector Vectorscope  Adjust the burst level to 75%. R should be located inside the ⊞.	⊘RV7/VO-19A(D-7)

11-22. PB Y PHASE EQUALIZE ADJUSTMENT

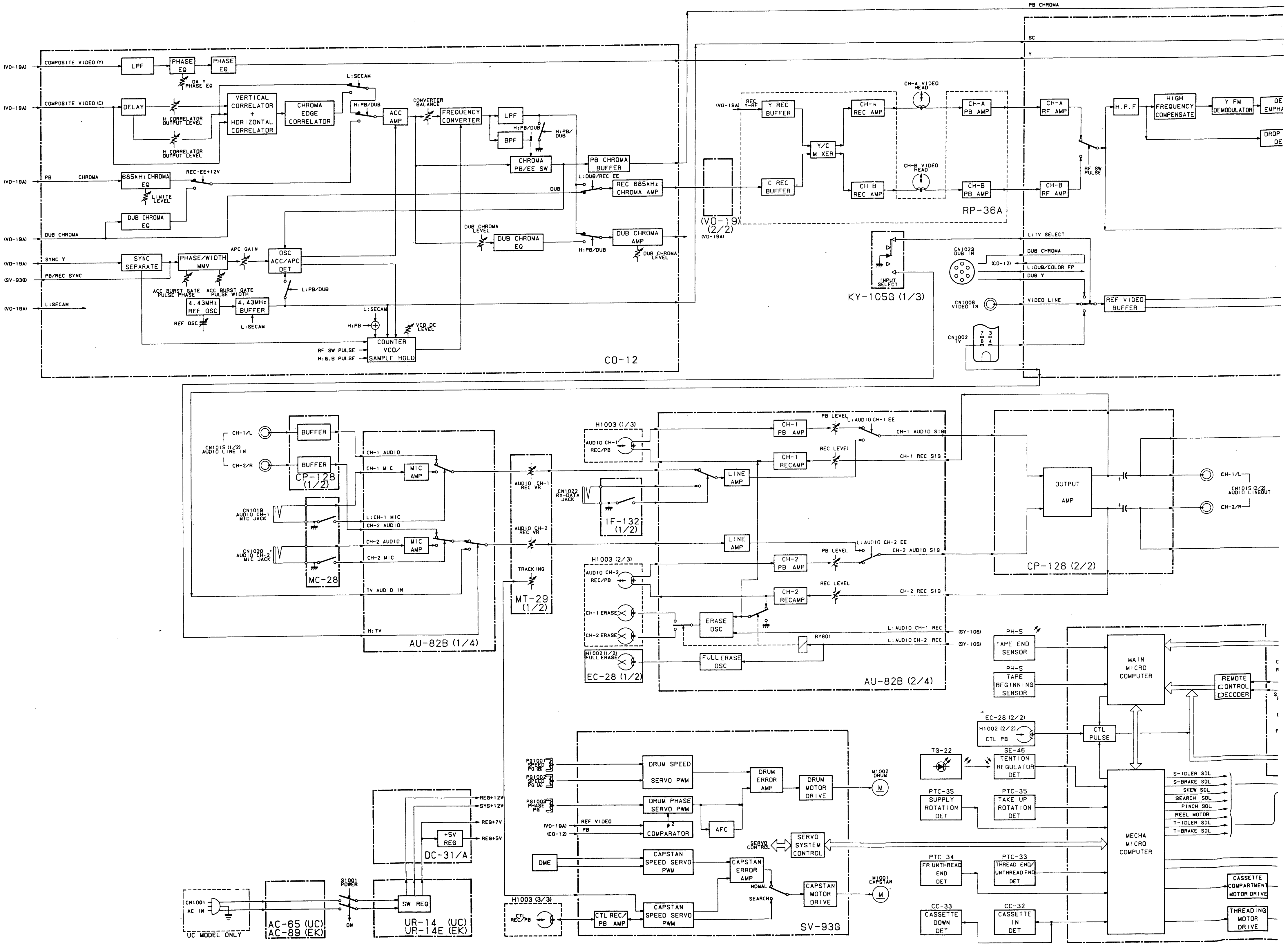
machine conditions for adjustment	specifications	adjustments
· VIDEO IN: pulse & bar · Insert the KCA-60 tape. · REC/PB mode	TP11/VO-19A(E-6)  A = B	⊘RV301/CO-12(C-4) TRIG : INT

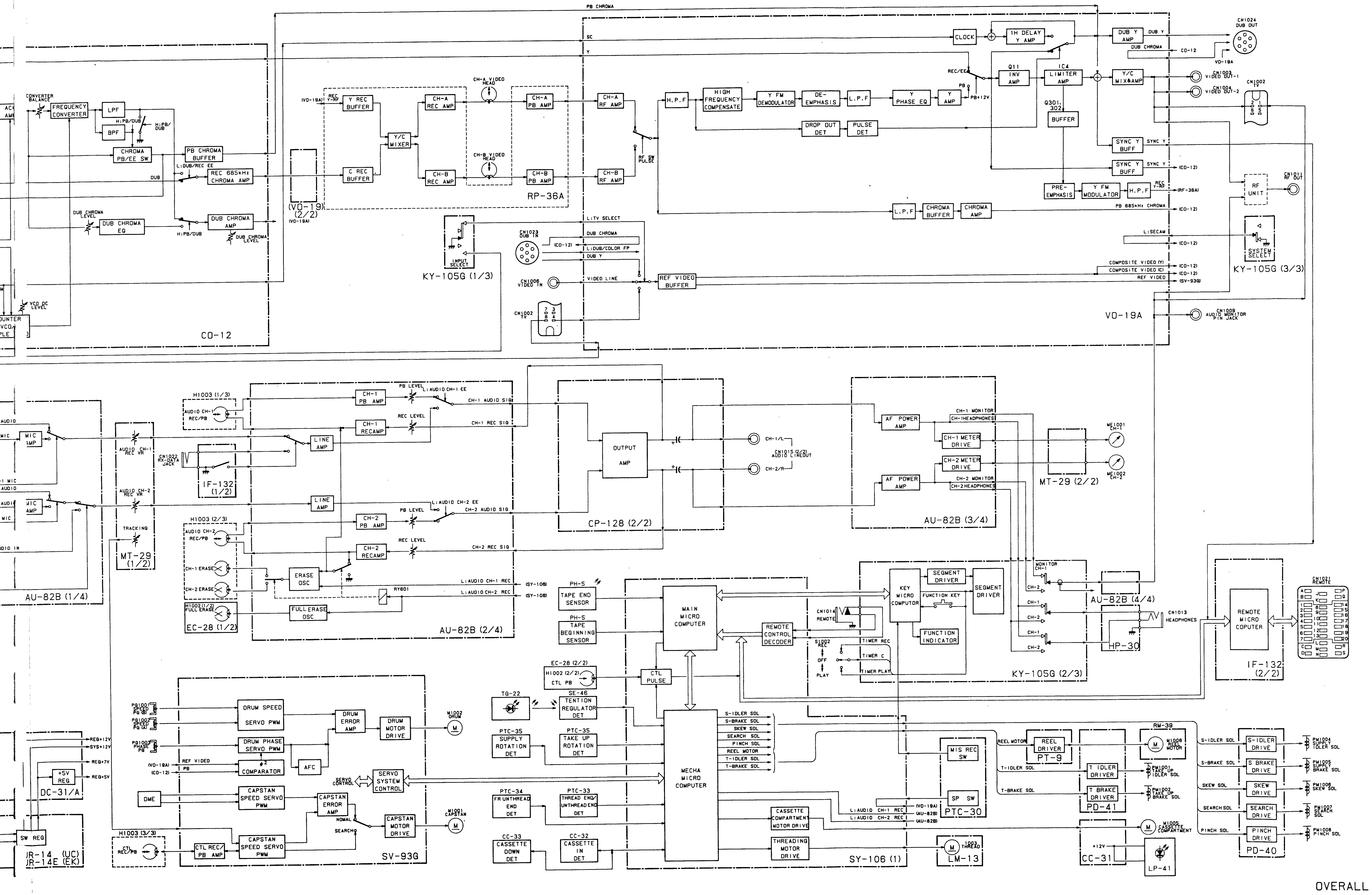
11-23. PB Y/C DELAY ADJUSTMENT

machine conditions for adjustment	specifications	adjustments
· Play back the Mod 20T pulse segment of the alignment tape RR5-2SC PAL.	VIDO OUT connector (terminated by 75Ω)  	⊘RV201/CO-12(H-3) TRIG: INT

SECTION 12
BLOCK DIAGRAM

OVERALL
BLOCK DIAGRAM

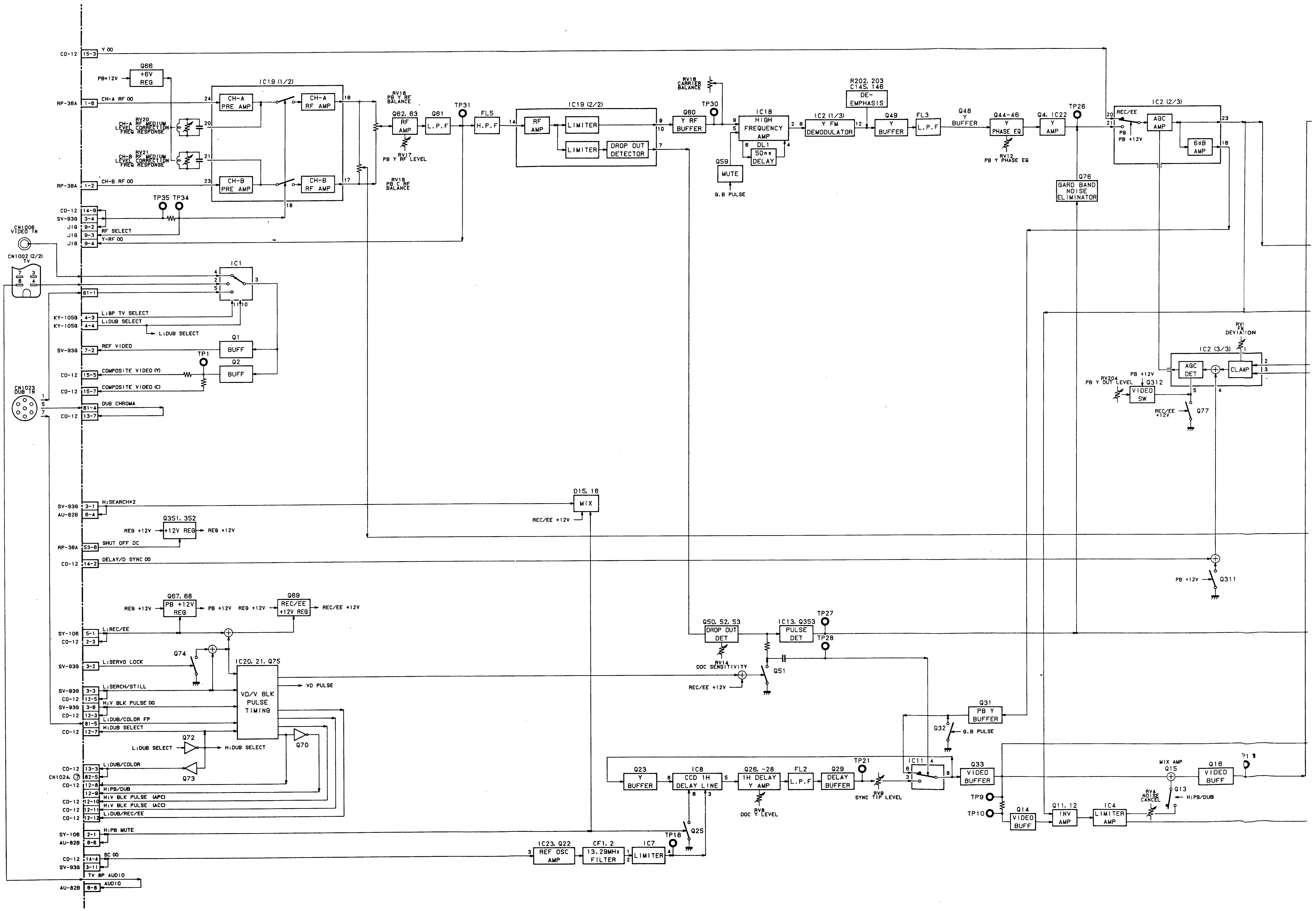

PB CHROMA
SC
Y
(VO-19A)
COMPOSITE VIDEO (Y)
LPF
PHASE EQ
PHASE EQ
DA Y PHASE EQ
COMPOSITE VIDEO (C)
DELAY
H CORRELATOR OUTPUT LEVEL
H CORRELATOR OUTPUT LEVEL
VERTICAL CORRELATOR + HORIZONTAL CORRELATOR
CHROMA EDGE CORRELATOR
L:SECAM
H:PB/DUB
ACC AMP
CONVERTER BALANCE
FREQUENCY CONVERTER
LPF
BPF
H:PB/DUB
H:PB/DUB
CHROMA PB/EE SW
PB CHROMA BUFFER
L:DUB/REC EE
DUB
REC 685kHz CHROMA AMP
PB
CHROMA
685kHz CHROMA EQ
REC·EE+12V
LIMITE LEVEL
DUB CHROMA EQ
DUB CHROMA
DUB CHROMA LEVEL
DUB CHROMA EQ
H:PB/DUB
DUB CHROMA AMP
DUB CHROMA LEVEL
SYNC Y
(SV-93G)
PB/REC SYNC
SYNC SEPARATE
PHASE/WIDTH MMV
APC GAIN
OSC ACC/APC DET
L:PB/DUB
ACC BURST GATE PULSE PHASE
ACC BURST GATE PULSE WIDTH
4.43MHz REF OSC
4.43MHz BUFFER
REF OSC
L:SECAM
L:SECAM
L:SECAM
H:PB
VCO DC LEVEL
RF SW PULSE
H:G.B PULSE
COUNTER VCO/ SAMPLE HOLD
CO-12
(VO-19) (2/2)
REC Y-RF
Y REC BUFFER
C REC BUFFER
Y/C MIXER
CH-A REC AMP
CH-B REC AMP
CH-A VIDEO HEAD
CH-B VIDEO HEAD
CH-A PB AMP
CH-B PB AMP
RP-36A
CH-A RF AMP
CH-B RF AMP
RF SW PULSE
H.P.F
HIGH FREQUENCY COMPENSATE
Y FM DEMODULATOR
DE EMPHA
DROP DE
INPUT SELECT
KY-105G (1/3)
L:TV SELECT
CN1023 DUB IN
DUB CHROMA
(CO-12)
L:DUB/COLOR FP
DUB Y
CN1006 VIDEO IN
VIDEO LINE
REF VIDEO BUFFER
CN1002 TV
7 3 8 4
CN1015 (1/2) AUDIO LINE IN
CH-1/L
CH-2/R
BUFFER
BUFFER
CP-128 (1/2)
CN1019 AUDIO CH-1 MIC JACK
CN1020 AUDIO CH-2 MIC JACK
MC-28
CH-1 AUDIO
CH-1 MIC
MIC AMP
L:CH-1 MIC
CH-2 AUDIO
CH-2 AUDIO
MIC AMP
CH-2 MIC
TV AUDIO IN
H:TV
AU-82B (1/4)
AUDIO CH-1 REC VR
AUDIO CH-2 REC VR
TRACKING
MT-29 (1/2)
CN1022 RX-DATA JACK
IF-132 (1/2)
H1003 (1/3)
AUDIO CH-1 REC/PB
H1003 (2/3)
AUDIO CH-2 REC/PB
CH-1 ERASE
CH-2 ERASE
H1002 (1/2) FULL ERASE
EC-28 (1/2)
CH-1 PB AMP
PB LEVEL
L:AUDIO CH-1 EE
CH-1 AUDIO SIG
CH-1 RECAMP
REC LEVEL
CH-1 REC SIG
LINE AMP
LINE AMP
L:AUDIO CH-2 EE
PB LEVEL
CH-2 AUDIO SIG
CH-2 PB AMP
CH-2 RECAMP
REC LEVEL
CH-2 REC SIG
ERASE OSC
FULL ERASE OSC
RY601
L:AUDIO CH-1 REC
L:AUDIO CH-2 REC
(SY-106)
(SY-106)
AU-82B (2/4)
OUTPUT AMP
CP-128 (2/2)
CH-1/L
CH-2/R
CN1015 (2/2) AUDIO LINE OUT
PH-5
TAPE END SENSOR
PH-5
TAPE BEGINNING SENSOR
MAIN MICRO COMPUTER
REMOTE CONTROL DECODER
EC-28 (2/2)
H1002 (2/2)
CTL PB
CTL PULSE
TG-22
SE-46
TENTION REGULATOR DET
PTC-35
SUPPLY ROTATION DET
PTC-35
TAKE UP ROTATION DET
PTC-34
FR UNTHREAD END DET
PTC-33
THREAD END/ UNTHREAD END DET
CC-33
CASSETTE DOWN DET
CC-32
CASSETTE IN DET
MECHA MICRO COMPUTER
S-IDLER SOL
S-BRAKE SOL
SKEW SOL
SEARCH SOL
PINCH SOL
REEL MOTOR
T-IDLER SOL
T-BRAKE SOL
CASSETTE COMPARTMENT MOTOR DRIVE
THREADING MOTOR DRIVE
PG1001 SPEED PG (B)
PG1002 SPEED PG (A)
PG1003 PHASE PG
DRUM SPEED SERVO PWM
DRUM PHASE SERVO PWM
DRUM ERROR AMP
DRUM MOTOR DRIVE
M1002 DRUM
M
REF VIDEO
PB
(CO-12)
COMPARATOR
AFC
SERVO CONTROL
SERVO SYSTEM CONTROL
DME
CAPSTAN SPEED SERVO PWM
CAPSTAN ERROR AMP
NOMAL
SEARCH
CAPSTAN MOTOR DRIVE
M1001 CAPSTAN
M
H1003 (3/3)
CTL REC/PB
CTL REC/ PB AMP
CAPSTAN SPEED SERVO PWM
SV-93G
REG+12V
SYS+12V
REG+7V
+5V REG
REG+5V
DC-31/A
CN1001 AC IN
UC MODEL ONLY
AC-65 (UC)
AC-89 (EK)
S1001 POWER
ON
SW REG
UR-14 (UC)
UR-14E (EK)


PB CHROMA
SC
Y
CONVERTER BALANCE
FREQUENCY CONVERTER
LPF
BPF
H:PB/DUB
CHROMA PB/EE SW
PB CHROMA BUFFER
L:DUB/REC EE
REC 685kHz CHROMA AMP
DUB
DUB CHROMA LEVEL
DUB CHROMA EQ
DUB CHROMA AMP
H:PB/DUB
DUB CHROMA LEVEL
VCO DC LEVEL
CO-12
(VO-19A)
(VO-19) (2/2)
Y REC BUFFER
C REC BUFFER
Y/C MIXER
CH-A REC AMP
CH-B REC AMP
CH-A VIDEO HEAD
CH-B VIDEO HEAD
CH-A PB AMP
CH-B PB AMP
RP-36A
CH-A RF AMP
CH-B RF AMP
RF SW PULSE
H.P.F
HIGH FREQUENCY COMPENSATE
Y FM DEMODULATOR
DE-EMPHASIS
L.P.F
Y PHASE EQ
Y AMP
DROP OUT DET
PULSE DET
CLOCK
1H DELAY Y AMP
REC/EE
PB
PB+12V
Q11 INV AMP
IC4 LIMITER AMP
Q301, 302 BUFFER
DUB Y AMP
DUB Y
DUB CHROMA
CO-12
VO-19A
CN1024 DUB OUT
Y/C MIX&AMP
CN1003 VIDEO OUT-1
CN1004 VIDEO OUT-2
CN1002 TV
SYNC Y BUFF
SYNC Y
SYNC Y BUFF
SYNC Y
(CO-12)
PRE-EMPHASIS
Y FM MODULATOR
H.P.F
REC Y-RF
(RF-36A)
RF UNIT
CN1011 RF OUT
L.P.F
CHROMA BUFFER
CHROMA AMP
PB 685kHz CHROMA
(CO-12)
L:SECAM
(CO-12)
SYSTEM SELECT
KY-105G (3/3)
L:TV SELECT
DUB CHROMA
L:DUB/COLOR FP
DUB Y
CN1023 DUB IN
(CO-12)
INPUT SELECT
KY-105G (1/3)
CN1006 VIDEO IN
VIDEO LINE
REF VIDEO BUFFER
COMPOSITE VIDEO (Y)
COMPOSITE VIDEO (C)
REF VIDEO
(CO-12)
(CO-12)
(SV-93G)
CN1002 TV
VO-19A
CN1009 AUDIO MONITOR PIN JACK
H1003 (1/3)
AUDIO CH-1 REC/PB
CH-1 PB AMP
PB LEVEL
L:AUDIO CH-1 EE
CH-1 AUDIO SIG
CH-1 RECAMP
REC LEVEL
CH-1 REC SIG
MIC AMP
AUDIO CH-1 REC VR
CN1022 RX-DATA JACK
IF-132 (1/2)
LINE AMP
AUDIO CH-2 REC VR
LINE AMP
L:AUDIO CH-2 EE
CH-2 AUDIO SIG
H1003 (2/3)
AUDIO CH-2 REC/PB
CH-2 PB AMP
PB LEVEL
CH-2 RECAMP
REC LEVEL
CH-2 REC SIG
TRACKING
MT-29 (1/2)
AU-82B (1/4)
CH-1 ERASE
CH-2 ERASE
ERASE OSC
RY801
L:AUDIO CH-1 REC
L:AUDIO CH-2 REC
(SY-106)
(SY-106)
H1002 (1/2) FULL ERASE
FULL ERASE OSC
EC-28 (1/2)
AU-82B (2/4)
OUTPUT AMP
CP-128 (2/2)
CH-1/L
CH-2/R
CN1015 (2/2) AUDIO LINEOUT
AF POWER AMP
AF POWER AMP
CH-1 MONITOR
CH-1 HEADPHONES
CH-1 METER DRIVE
CH-2 METER DRIVE
CH-2 MONITOR
CH-2 HEADPHONES
AU-82B (3/4)
ME1001 CH-1
ME1002 CH-2
MT-29 (2/2)
PH-5
TAPE END SENSOR
PH-5
TAPE BEGINNING SENSOR
MAIN MICRO COMPUTER
KEY MICRO COMPUTOR
SEGMENT DRIVER
SEGMENT DRIVER
FUNCTION KEY
FUNCTION INDICATOR
CN1014 REMOTE
REMOTE CONTROL DECODER
S1002 REC OFF PLAY
TIMER REC
TIMER C
TIMER PLAY
KY-105G (2/3)
MONITOR CH-1
CH-2
CH-1
CH-2
CH-1
CH-2
AU-82B (4/4)
CN1013 HEADPHONES
HP-30
REMOTE MICRO COPUTER
IF-132 (2/2)
CN1021 REMOTE
EC-28 (2/2)
H1002 (2/2) CTL PB
CTL PULSE
TG-22
SE-46 TENTION REGULATOR DET
PTC-35 SUPPLY ROTATION DET
PTC-35 TAKE UP ROTATION DET
PTC-34 FR UNTHREAD END DET
PTC-33 THREAD END/UNTHREAD END DET
CC-33 CASSETTE DOWN DET
CC-32 CASSETTE IN DET
MECHA MICRO COMPUTER
S-IDLER SOL
S-BRAKE SOL
SKEW SOL
SEARCH SOL
PINCH SOL
REEL MOTOR
T-IDLER SOL
T-BRAKE SOL
CASSETTE COMPARTMENT MOTOR DRIVE
THREADING MOTOR DRIVE
SY-106 (1)
MIS REC SW
SP SW
PTC-30
L:AUDIO CH-1 REC
L:AUDIO CH-2 REC
(VO-19A)
(AU-82B)
(AU-82B)
M1003 THREAD
LM-13
REEL MOTOR
REEL DRIVER
PT-9
T-IDLER SOL
T IDLER DRIVER
T-BRAKE SOL
T BRAKE DRIVER
PD-41
RM-39
M1006 REEL MOTOR
PM1001 TAKE UP IDLER SOL
PM1002 TAKE UP BRAKE SOL
M1005 CASSETTE COMPARTMENT
+12V
CC-31
LP-41
S-IDLER SOL
S-IDLER DRIVE
S-BRAKE SOL
S BRAKE DRIVE
SKEW SOL
SKEW DRIVE
SEARCH SOL
SEARCH DRIVE
PINCH SOL
PINCH DRIVE
PD-40
PM1004 SUPPLY IDLER SOL
PM1005 SUPPLY BRAKE SOL
PM1006 SKEW SOL
PM1007 SEARCH SOL
PM1008 PINCH SOL
PG1001 SPEED PG
PG1002 SPEED PG
PG1003 PHASE PG
DRUM SPEED SERVO PWM
DRUM PHASE SERVO PWM
DRUM ERROR AMP
DRUM MOTOR DRIVE
M1002 DRUM
(VO-19A) REF VIDEO
(CO-12) PB
COMPARATOR
AFC
SERVO CONTROL
SERVO SYSTEM CONTROL
DME
CAPSTAN SPEED SERVO PWM
CAPSTAN ERROR AMP
NOMAL
SEARCH
CAPSTAN MOTOR DRIVE
M1001 CAPSTAN
H1003 (3/3)
CTL REC/PB
CTL REC/PB AMP
CAPSTAN SPEED SERVO PWM
SV-93G
REG+12V
SYS+12V
REG+7V
REG+5V
+5V REG
DC-31/A
SW REG
JR-14 (UC)
JR-14E (EK)

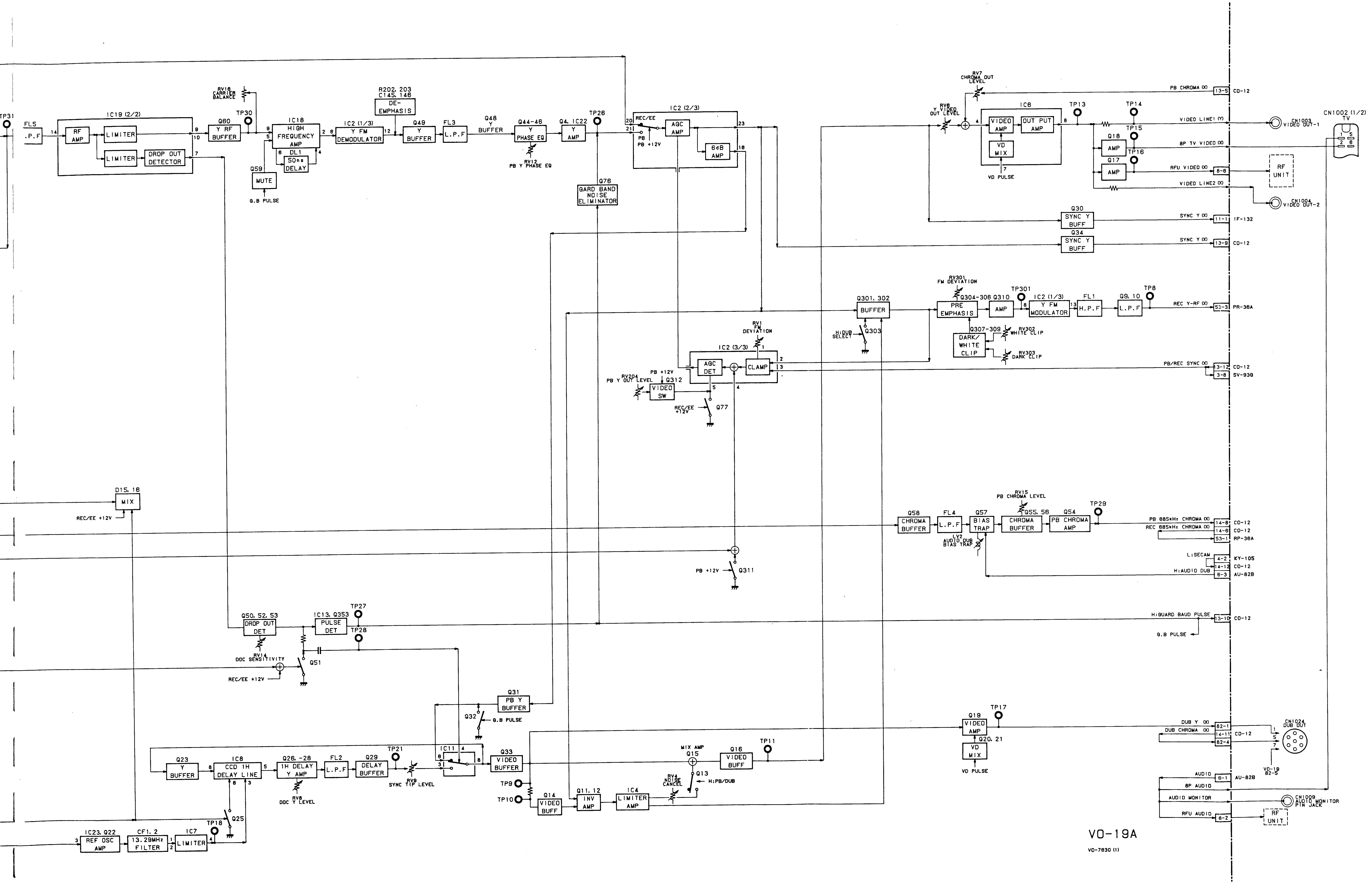
OVERALL

VO-7630

VIDEO SYSTEM
BLOCK DIAGRAM



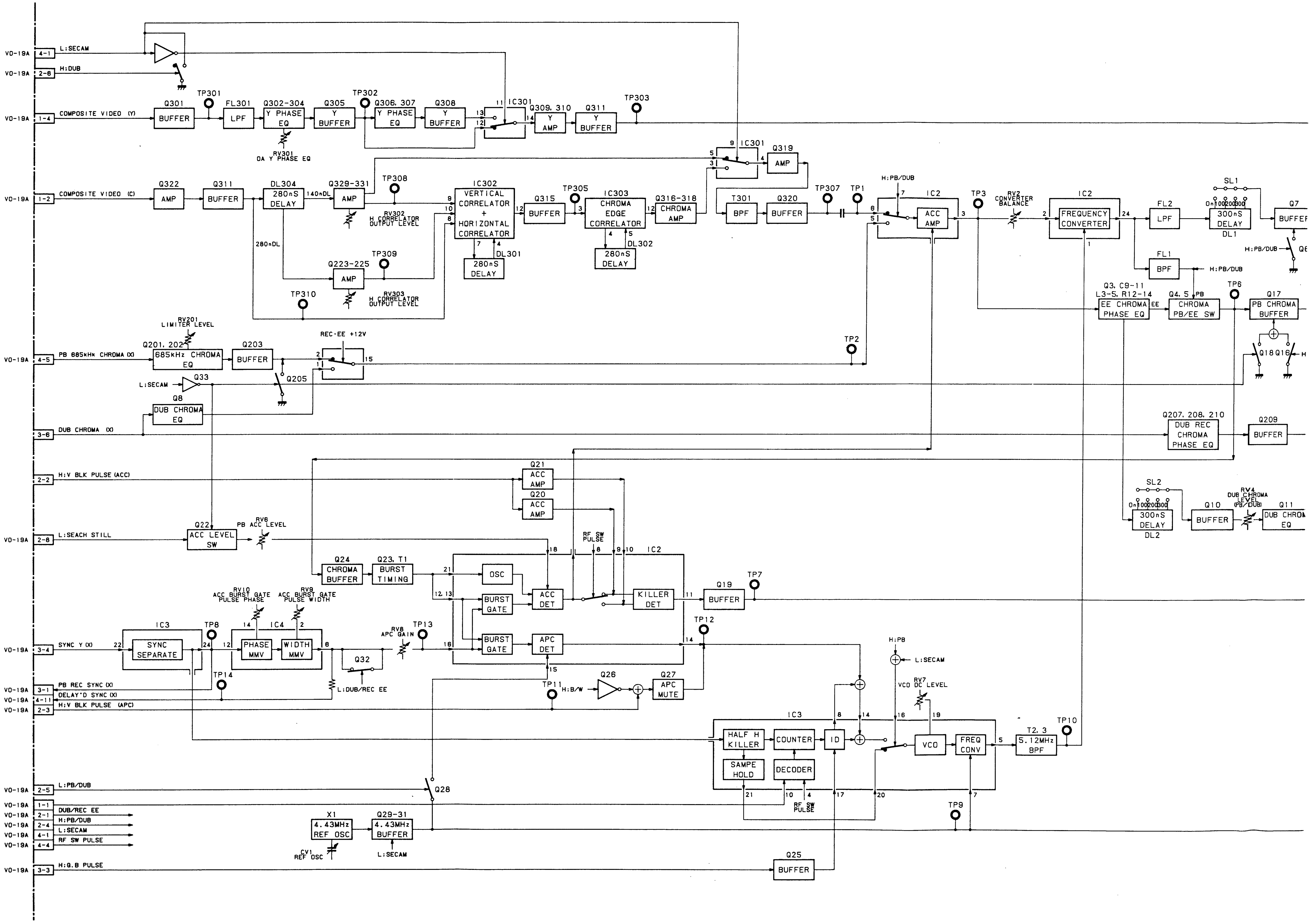
CO-12 15-3 Y 00
PB+12V Q66 +6V REG
RP-38A 1-6 CH-A RF 00
IC19 (1/2)
CH-A PRE AMP
CH-A RF AMP
RV20 CH-A RF MEDIUM LEVEL CORRECTION FREQ RESPONSE
RV21 CH-B RF MEDIUM LEVEL CORRECTION FREQ RESPONSE
RP-38A 1-2 CH-B RF 00
CH-B PRE AMP
CH-B RF AMP
RV18 PB Y RF BALANCE
Q62, 63 RF AMP
RV17 PB Y RF LEVEL
RV16 PB C RF BALANCE
Q61 L.P.F
TP31
FL5 H.P.F
IC19 (2/2)
RF AMP
LIMITER
LIMITER
DROP OUT DETECTOR
RV15 CARRIER BALANCE
TP30
Q60 Y RF BUFFER
IC18 HIGH FREQUENCY AMP
DL1 50ns DELAY
Q59 MUTE
G.B PULSE
IC2 (1/3) Y FM DEMODULATOR
R202, 203 C145, 146 DE-EMPHASIS
Q49 Y BUFFER
FL3 L.P.F
Q48 Y BUFFER
Q44-46 Y PHASE EQ
RV12 PB Y PHASE EQ
Q4, IC22 Y AMP
TP26
IC2 (2/3)
REC/EE
PB
PB +12V
AGC AMP
6dB AMP
Q76 GARD BAND NOISE ELIMINATOR
TP35 TP34
CO-12 14-9
SV-93G 3-4
J16 9-2
J16 9-3 RF SELECT
J16 9-4 Y-RF 00
CN1006 VIDEO IN
CN1002 (2/2) TV
IC1
81-1
KY-105G 4-3 L:8P TV SELECT
KY-105G 4-4 L:DUB SELECT
L:DUB SELECT
SV-93G 7-2 REF VIDEO
Q1 BUFF
TP1
Q2 BUFF
CO-12 15-5 COMPOSITE VIDEO (Y)
CO-12 15-7 COMPOSITE VIDEO (C)
CN1023 DUB IN
81-4 DUB CHROMA
CO-12 13-7
RV1 FM DEVIATION
IC2 (3/3)
AGC DET
CLAMP
RV204 PB Y OUT LEVEL
PB +12V
Q312 VIDEO SW
REC/EE +12V
Q77
SV-93G 3-1 H:SEARCH×2
AU-82B 6-4
D15, 16 MIX
REC/EE +12V
Q351, 352
REG +12V +12V REG REG +12V
RP-38A 53-8 SHUT OFF DC
CO-12 14-2 DELAY/D SYNC 00
PB +12V Q311
Q67, 68 PB +12V REG
REG +12V
PB +12V
REG +12V
Q69 REC/EE +12V REG
REC/EE +12V
SY-106 5-1 L:REC/EE
CO-12 2-3
Q74
SV-93G 3-2 L:SERVO LOCK
IC20, 21, Q75 VD/V BLK PULSE TIMING
VD PULSE
SV-93G 3-3 L:SEARCH/STILL
CO-12 12-5
SV-93G 3-6 H:V BLK PULSE 00
CO-12 12-3 L:DUB/COLOR FP
81-5
CO-12 12-7 H:DUB SELECT
Q72
L:DUB SELECT
H:DUB SELECT
Q70
L:DUB/COLOR
Q73
CO-12 13-3
CN1024 82-5
CO-12 12-8
12-9 H:PB/DUB
CO-12 12-10 H:V BLK PULSE (APC)
CO-12 12-11 H:V BLK PULSE (ACC)
CO-12 12-12 L:DUB/REC/EE
SY-106 2-1 H:PB MUTE
AU-82B 8-8
CO-12 14-4 SC 00
SV-93G 3-11
TV 8P AUDIO
AU-82B 8-8 AUDIO
Q50, 52, 53 DROP OUT DET
RV14 DOC SENSITIVITY
IC13, Q353 PULSE DET
TP27
TP28
Q51
REC/EE +12V
Q31 PB Y BUFFER
Q32 G.B PULSE
IC11
Q33 VIDEO BUFFER
TP9
TP10
Q23 Y BUFFER
IC8 CCD 1H DELAY LINE
Q26, -28 1H DELAY Y AMP
RV8 DOC Y LEVEL
FL2 L.P.F
Q29 DELAY BUFFER
TP21
RV9 SYNC TIP LEVEL
Q25
TP18
IC23, Q22 REF OSC AMP
CF1, 2 13.29MHz FILTER
IC7 LIMITER
Q14 VIDEO BUFF
Q11, 12 INV AMP
IC4 LIMITER AMP
RV4 NOISE CANCEL
MIX AMP Q15
Q13
H:PB/DUB
Q16 VIDEO BUFF

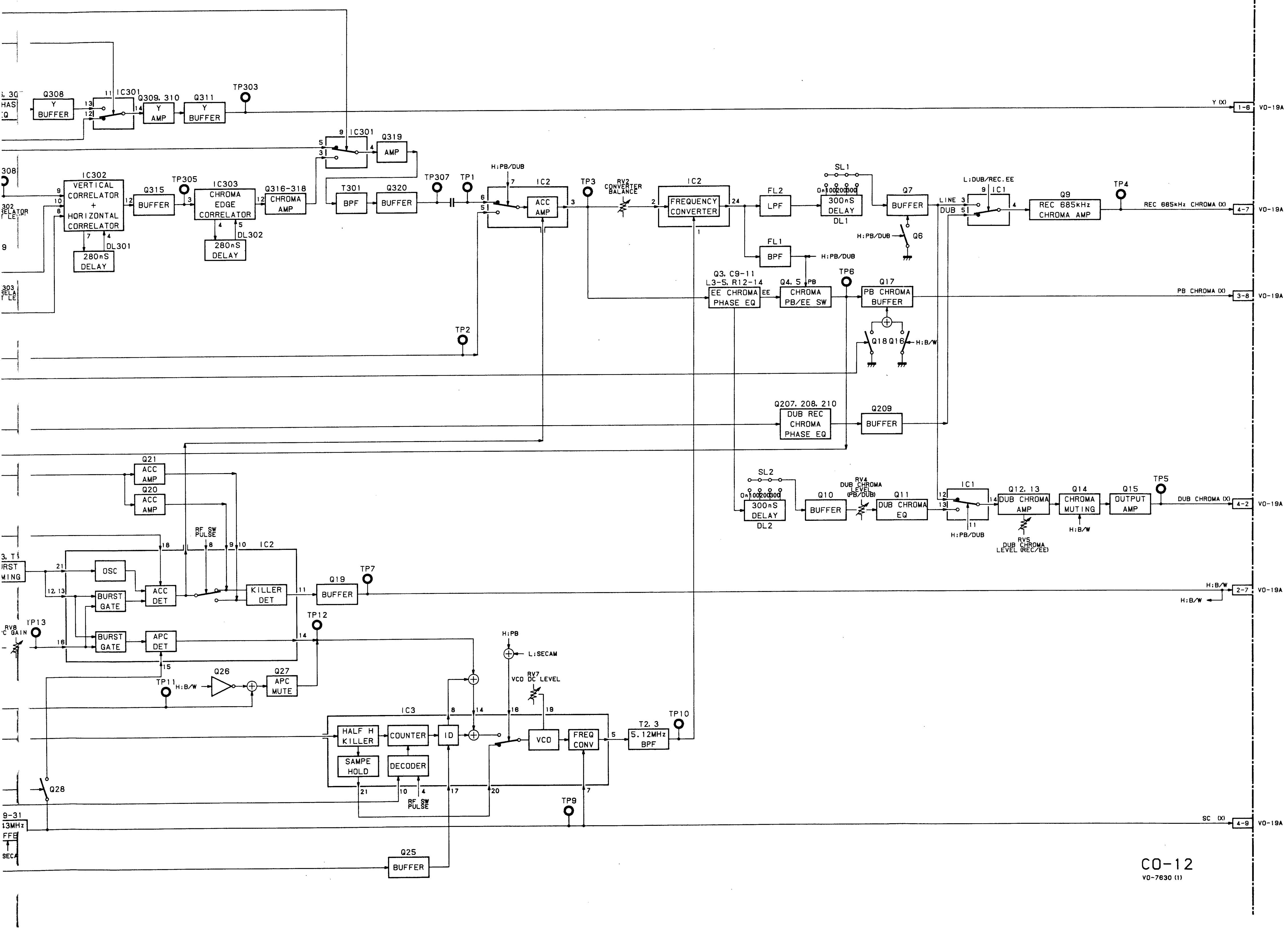

TP31
FL5
L.P.F
IC19 (2/2)
RF AMP
LIMITER
LIMITER
DROP OUT DETECTOR
RV16 CARRIER BALANCE
TP30
Q60 Y RF BUFFER
IC18 HIGH FREQUENCY AMP
DL1 50ns DELAY
Q59 MUTE
G.B PULSE
IC2 (1/3) Y FM DEMODULATOR
R202, 203 C145, 146 DE-EMPHASIS
Q49 Y BUFFER
FL3 L.P.F
Q48 Y BUFFER
Q44-46 Y PHASE EQ
RV12 PB Y PHASE EQ
Q4, IC22 Y AMP
TP26
Q76 GARD BAND NOISE ELIMINATOR
IC2 (2/3)
REC/EE
PB
PB +12V
AGC AMP
6dB AMP
RV7 CHROMA OUT LEVEL
RV8 Y VIDEO OUT LEVEL
IC6
VIDEO AMP
OUT PUT AMP
VD MIX
VD PULSE
TP13
TP14
TP15
TP16
Q18 AMP
Q17 AMP
PB CHROMA (X)
VIDEO LINE1 (Y)
8P TV VIDEO (X)
RFU VIDEO (X)
VIDEO LINE2 (X)
CO-12
CN1003 VIDEO OUT-1
CN1002 (1/2) TV
RF UNIT
CN1004 VIDEO OUT-2
Q30 SYNC Y BUFF
Q34 SYNC Y BUFF
SYNC Y (X)
IF-132
RV301 FM DEVIATION
Q301, 302 BUFFER
H:DUB SELECT
Q303
TP301
Q304-306 PRE EMPHASIS
Q310 AMP
IC2 (1/3) Y FM MODULATOR
FL1 H.P.F
Q9, 10 L.P.F
TP8
REC Y-RF (X)
PR-38A
Q307-309 DARK/WHITE CLIP
RV302 WHITE CLIP
RV303 DARK CLIP
RV1 FM DEVIATION
IC2 (3/3)
AGC DET
CLAMP
PB/REC SYNC (X)
SV-93G
RV204 PB Y OUT LEVEL
PB +12V
Q312 VIDEO SW
REC/EE +12V
Q77
D15, 16 MIX
REC/EE +12V
PB +12V
Q311
RV15 PB CHROMA LEVEL
Q58 CHROMA BUFFER
FL4 L.P.F
Q57 BIAS TRAP
LV2 AUDIO DUB BIAS TRAP
Q55, 56 CHROMA BUFFER
Q54 PB CHROMA AMP
TP29
PB 685kHz CHROMA (X)
REC 685kHz CHROMA (X)
RP-38A
L:SECAM
KY-105
H:AUDIO DUB
AU-82B
Q50, 52, 53 DROP OUT DET
RV14 DOC SENSITIVITY
Q51
REC/EE +12V
IC13, Q353 PULSE DET
TP27
TP28
H:GUARD BAUD PULSE
G.B PULSE
Q31 PB Y BUFFER
Q32
G.B PULSE
Q23 Y BUFFER
IC8 CCD 1H DELAY LINE
Q26, -28 1H DELAY Y AMP
RV8 DOC Y LEVEL
FL2 L.P.F
Q29 DELAY BUFFER
TP21
RV9 SYNC TIP LEVEL
IC11
Q33 VIDEO BUFFER
TP9
TP10
Q14 VIDEO BUFF
Q11, 12 INV AMP
IC4 LIMITER AMP
RV4 NOISE CANCEL
MIX AMP Q15
Q13
H:PB/DUB
Q16 VIDEO BUFF
TP11
Q25
TP18
IC23, Q22 REF OSC AMP
CF1, 2 13.29MHz FILTER
IC7 LIMITER
Q19 VIDEO AMP
TP17
Q20, 21 VD MIX
VD PULSE
DUB Y (X)
DUB CHROMA (X)
CN1024 DUB OUT
VO-18 82-S
AUDIO
8P AUDIO
AUDIO MONITOR
RFU AUDIO
CN1009 AUDIO MONITOR PIN JACK
RF UNIT

VO-19A

VO-7630 (1)

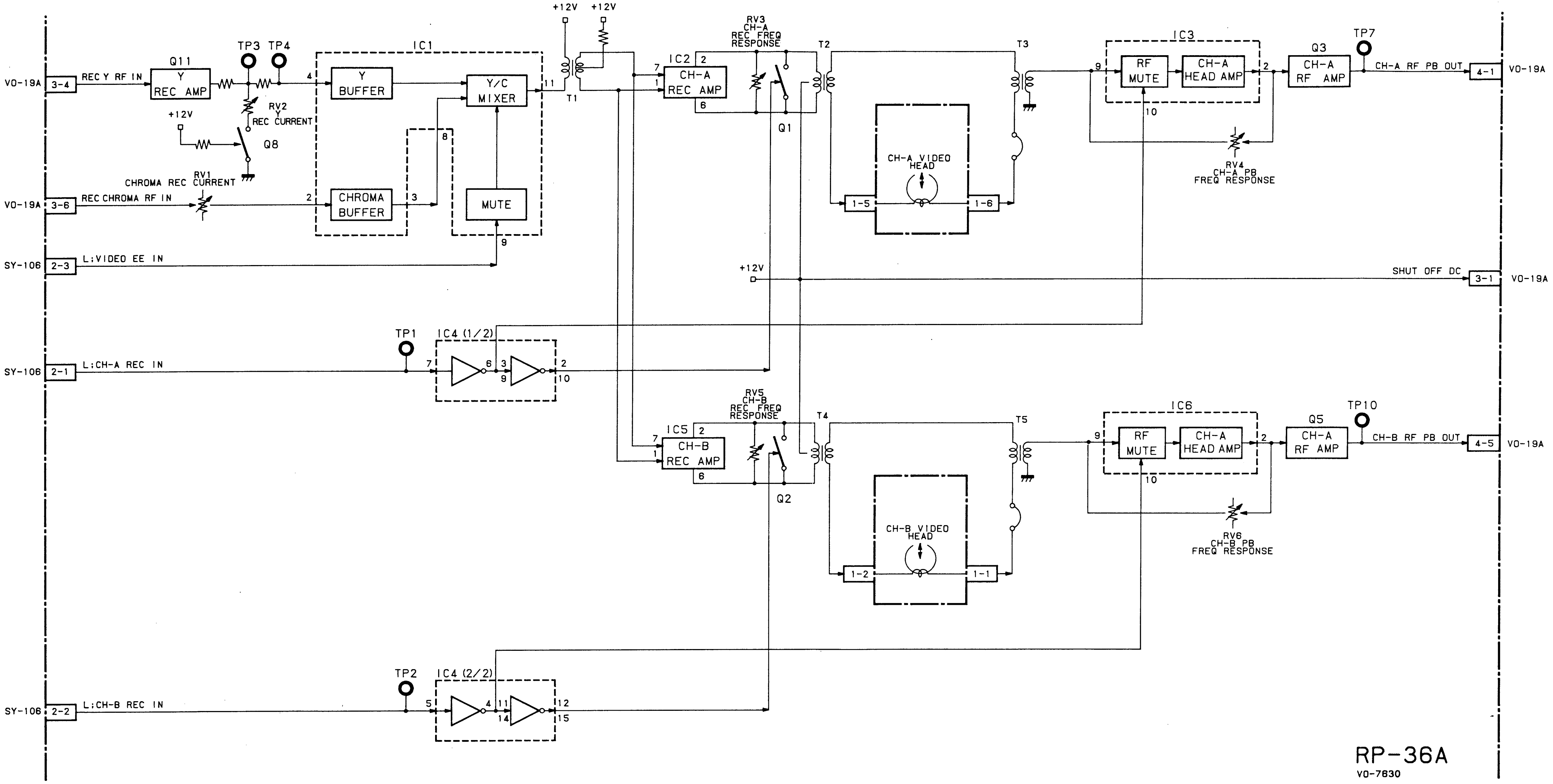
VIDEO SYSTEM
BLOCK DIAGRAM


VO-19A 4-1 L:SECAM
VO-19A 2-6 H:DUB
VO-19A 1-4 COMPOSITE VIDEO (Y)
Q301 BUFFER
TP301
FL301 LPF
Q302-304 Y PHASE EQ
RV301 DA Y PHASE EQ
Q305 Y BUFFER
TP302
Q306, 307 Y PHASE EQ
Q308 Y BUFFER
IC301
Q309, 310 Y AMP
Q311 Y BUFFER
TP303
IC301
Q319 AMP
VO-19A 1-2 COMPOSITE VIDEO (C)
Q322 AMP
Q311 BUFFER
DL304 280nS DELAY
140nDL
280nDL
Q329-331 AMP
RV302 H CORRELATOR OUTPUT LEVEL
TP308
IC302 VERTICAL CORRELATOR + HORIZONTAL CORRELATOR
DL301 280nS DELAY
Q223-225 AMP
TP309
TP310
RV303 H CORRELATOR OUTPUT LEVEL
Q315 BUFFER
TP305
IC303 CHROMA EDGE CORRELATOR
DL302 280nS DELAY
Q316-318 CHROMA AMP
T301 BPF
Q320 BUFFER
TP307
TP1
H:PB/DUB
IC2 ACC AMP
TP3
RV2 CONVERTER BALANCE
IC2 FREQUENCY CONVERTER
FL2 LPF
SL1
DL1 300nS DELAY
Q7 BUFFER
H:PB/DUB
FL1 BPF
H:PB/DUB
Q3, C9-11 L3-5, R12-14 EE CHROMA PHASE EQ
Q4, 5 CHROMA PB/EE SW
TP6
Q17 PB CHROMA BUFFER
Q18 Q16
TP2
RV201 LIMITER LEVEL
VO-19A 4-5 PB 685kHz CHROMA (X)
Q201, 202 685kHz CHROMA EQ
Q203 BUFFER
REC·EE +12V
L:SECAM
Q33
Q205
Q8 DUB CHROMA EQ
VO-19A 3-6 DUB CHROMA (X)
Q207, 208, 210 DUB REC CHROMA PHASE EQ
Q209 BUFFER
2-2 H:V BLK PULSE (ACC)
Q21 ACC AMP
Q20 ACC AMP
SL2
DL2 300nS DELAY
Q10 BUFFER
RV4 DUB CHROMA LEVEL (PB/DUB)
Q11 DUB CHROMA EQ
VO-19A 2-8 L:SEACH STILL
Q22 ACC LEVEL SW
RV6 PB ACC LEVEL
RF SW PULSE
IC2
Q24 CHROMA BUFFER
Q23, T1 BURST TIMING
OSC
BURST GATE
ACC DET
KILLER DET
Q19 BUFFER
TP7
RV10 ACC BURST GATE PULSE PHASE
RV9 ACC BURST GATE PULSE WIDTH
BURST GATE
APC DET
TP12
VO-19A 3-4 SYNC Y (X)
IC3 SYNC SEPARATE
TP8
IC4 PHASE MMV
WIDTH MMV
Q32
RV8 APC GAIN
TP13
TP14
L:DUB/REC EE
VO-19A 3-1 PB REC SYNC (X)
VO-19A 4-11 DELAY'D SYNC (X)
VO-19A 2-3 H:V BLK PULSE (APC)
TP11 H:B/W
Q26
Q27 APC MUTE
H:PB
L:SECAM
RV7 VCO DC LEVEL
IC3
HALF H KILLER
COUNTER
ID
VCO
FREQ CONV
SAMPE HOLD
DECODER
RF SW PULSE
T2, 3 5.12MHz BPF
TP10
TP9
VO-19A 2-5 L:PB/DUB
Q28
VO-19A 1-1 DUB/REC EE
VO-19A 2-1 H:PB/DUB
VO-19A 2-4 L:SECAM
VO-19A 4-1 RF SW PULSE
VO-19A 4-4
X1 4.43MHz REF OSC
CV1 REF OSC
Q29-31 4.43MHz BUFFER
L:SECAM
VO-19A 3-3 H:G.B PULSE
Q25 BUFFER

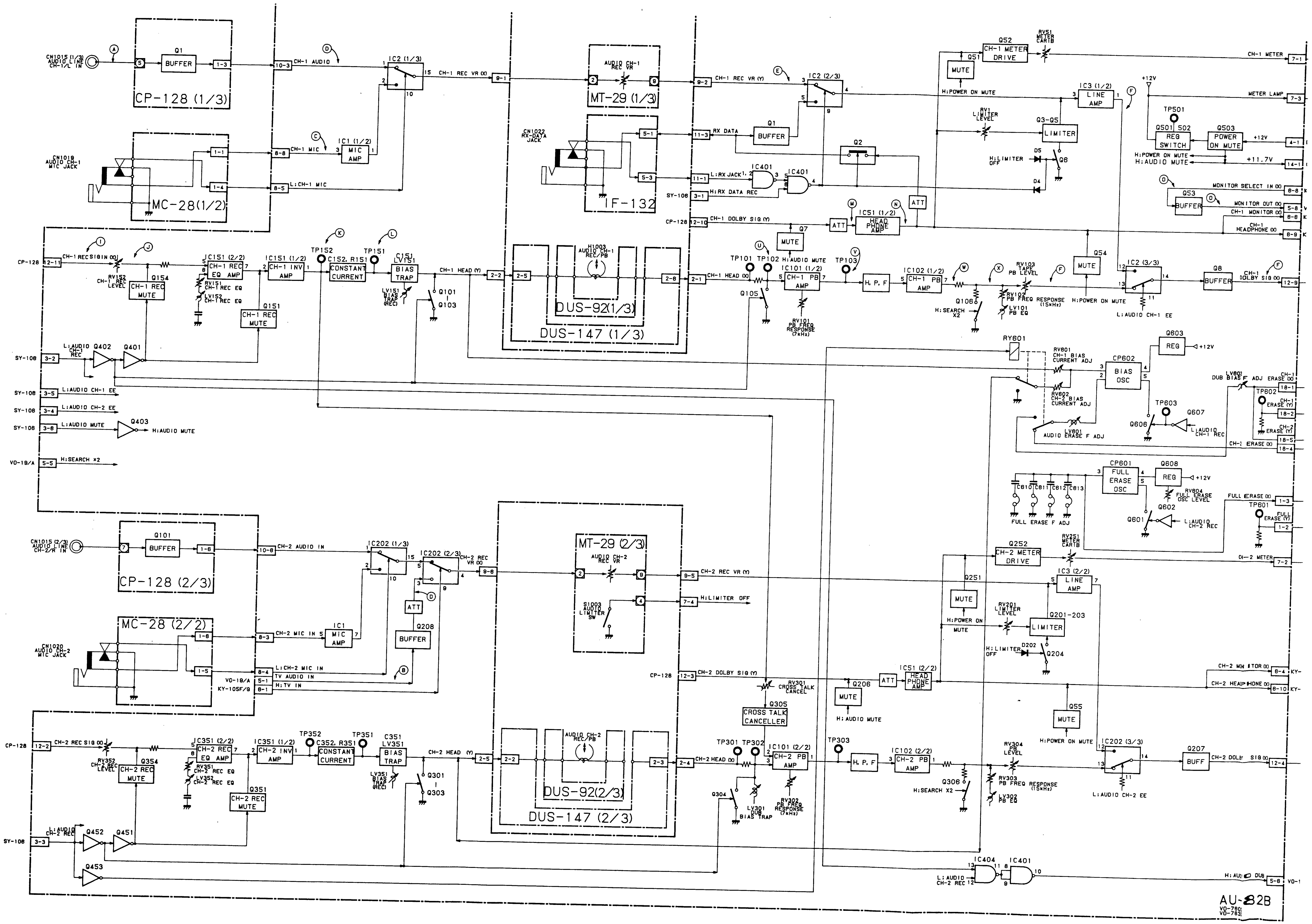

Q308
Y BUFFER
IC301
Q309, 310
Y AMP
Q311
Y BUFFER
TP303
Y (X)
1-6
VO-19A
IC301
Q319
AMP
IC302
VERTICAL CORRELATOR + HORIZONTAL CORRELATOR
280nS DELAY
DL301
Q315
BUFFER
TP305
IC303
CHROMA EDGE CORRELATOR
280nS DELAY
DL302
Q316-318
CHROMA AMP
T301
BPF
Q320
BUFFER
TP307
TP1
H:PB/DUB
IC2
ACC AMP
TP3
RV2 CONVERTER BALANCE
IC2
FREQUENCY CONVERTER
FL2
LPF
SL1
300nS DELAY
DL1
Q7
BUFFER
H:PB/DUB
Q6
L:DUB/REC.EE
LINE
DUB
IC1
Q9
REC 685kHz CHROMA AMP
TP4
REC 685kHz CHROMA (X)
4-7
VO-19A
FL1
BPF
H:PB/DUB
Q3, C9-11 L3-5, R12-14
EE CHROMA PHASE EQ
Q4, 5
CHROMA PB/EE SW
TP6
Q17
PB CHROMA BUFFER
PB CHROMA (X)
3-8
VO-19A
Q18
Q16
H:B/W
TP2
Q207, 208, 210
DUB REC CHROMA PHASE EQ
Q209
BUFFER
Q21
ACC AMP
Q20
ACC AMP
SL2
300nS DELAY
DL2
Q10
BUFFER
RV4 DUB CHROMA LEVEL (PB/DUB)
Q11
DUB CHROMA EQ
IC1
H:PB/DUB
Q12, 13
DUB CHROMA AMP
RV5 DUB CHROMA LEVEL (REC/EE)
Q14
CHROMA MUTING
H:B/W
Q15
OUTPUT AMP
TP5
DUB CHROMA (X)
4-2
VO-19A
RF SW PULSE
IC2
OSC
BURST GATE
ACC DET
KILLER DET
Q19
BUFFER
TP7
H:B/W
2-7
VO-19A
H:B/W
BURST GATE
APC DET
TP12
RV8
TP13
TP11
H:B/W
Q26
Q27
APC MUTE
H:PB
L:SECAM
RV7 VCO DC LEVEL
IC3
HALF H KILLER
SAMPE HOLD
COUNTER
DECODER
ID
VCO
FREQ CONV
T2, 3
5.12MHz BPF
TP10
RF SW PULSE
TP9
Q28
SC (X)
4-9
VO-19A
Q25
BUFFER

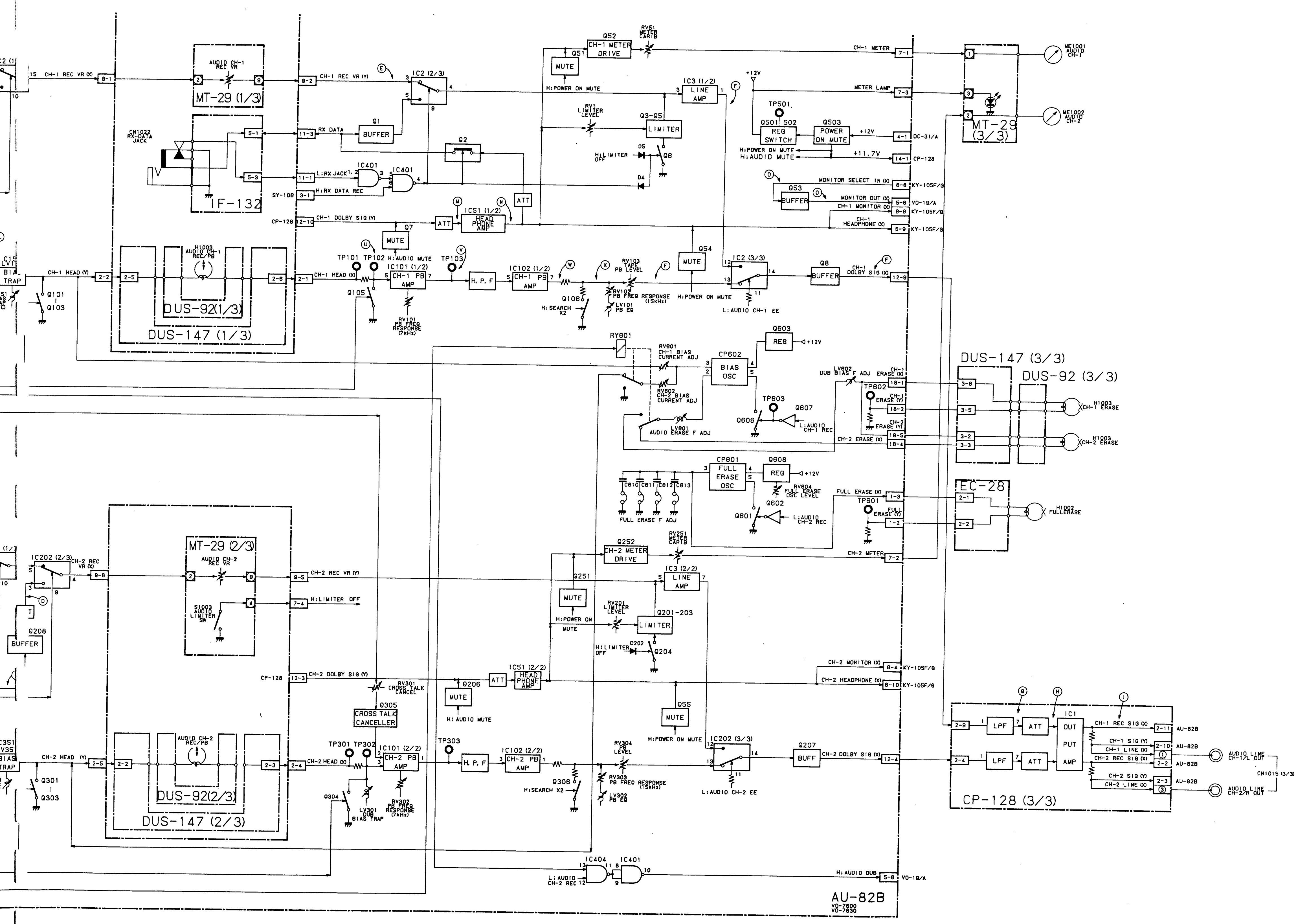
CO-12
VO-7630 (1)

VIDEO SYSTEM
BLOCK DIAGRAM


VO-19A 3-4
REC Y RF IN
Q11
Y REC AMP
TP3
TP4
RV2 REC CURRENT
+12V
Q8
RV1 CHROMA REC CURRENT
VO-19A 3-6
REC CHROMA RF IN
IC1
Y BUFFER
Y/C MIXER
CHROMA BUFFER
MUTE
SY-106 2-3
L:VIDEO EE IN
+12V
+12V
T1
RV3 CH-A REC FREQ RESPONSE
IC2
CH-A REC AMP
Q1
T2
T3
CH-A VIDEO HEAD
1-5
1-6
IC3
RF MUTE
CH-A HEAD AMP
RV4 CH-A PB FREQ RESPONSE
Q3
CH-A RF AMP
TP7
CH-A RF PB OUT
4-1 VO-19A
+12V
SHUT OFF DC
3-1 VO-19A
TP1
IC4 (1/2)
SY-106 2-1
L:CH-A REC IN
RV5 CH-B REC FREQ RESPONSE
IC5
CH-B REC AMP
Q2
T4
T5
CH-B VIDEO HEAD
1-2
1-1
IC6
RF MUTE
CH-A HEAD AMP
RV6 CH-B PB FREQ RESPONSE
Q5
CH-A RF AMP
TP10
CH-B RF PB OUT
4-5 VO-19A
TP2
IC4 (2/2)
SY-106 2-2
L:CH-B REC IN
RP-36A
VO-7630

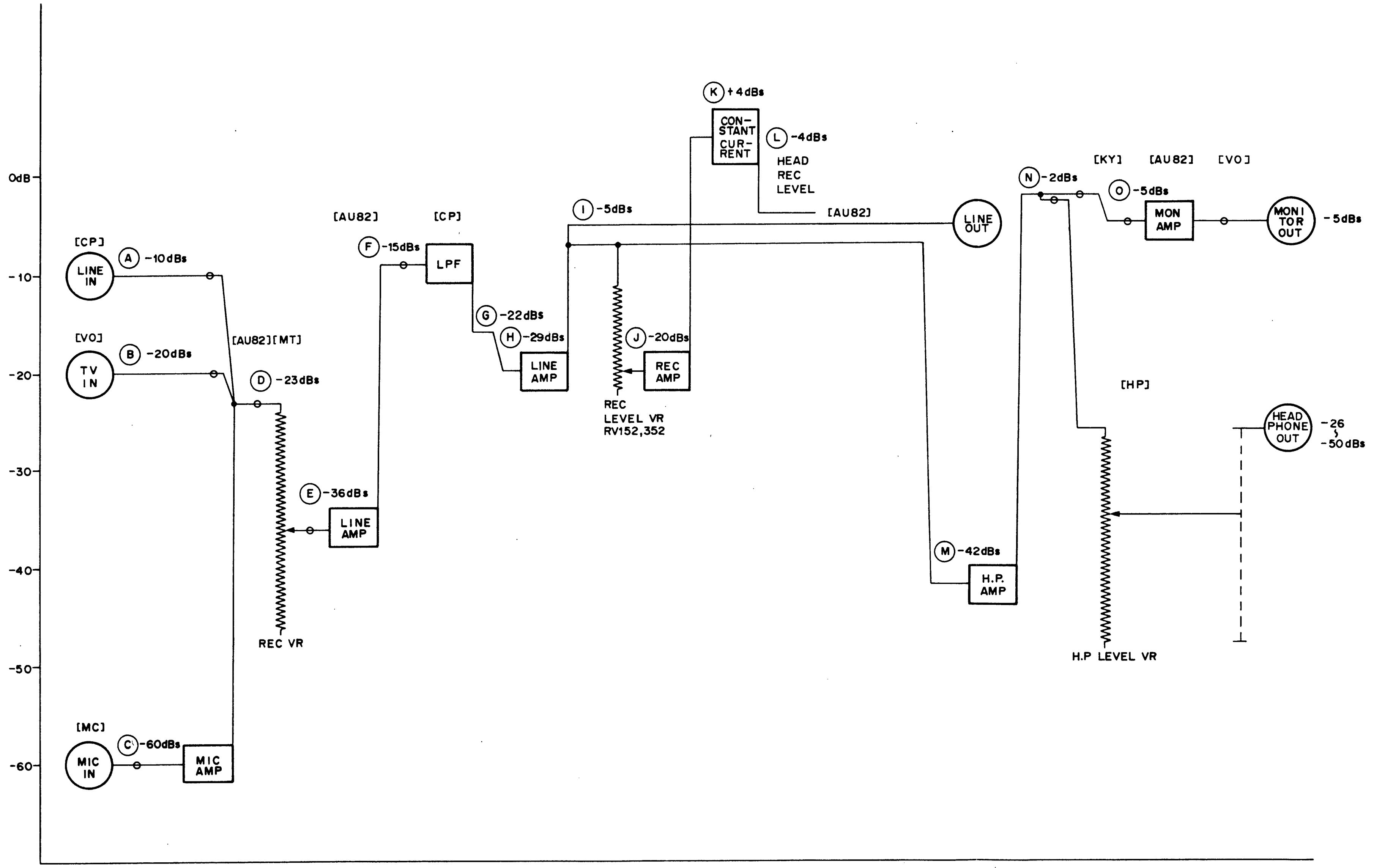
AUDIO SYSTEM
BLOCK DIAGRAM


CN1015 (1/3) AUDIO LINE CH-1/L IN
Q1
BUFFER
CP-128 (1/3)
CN1018 AUDIO CH-1 MIC JACK
MC-28(1/2)
CH-1 AUDIO
IC2 (1/3)
CH-1 REC VR (X)
CH-1 MIC
IC1 (1/2)
MIC AMP
L:CH-1 MIC
MT-29 (1/3)
AUDIO CH-1 REC VR
CN1022 RX-DATA JACK
IF-132
DUS-92(1/3)
DUS-147 (1/3)
H1003 AUDIO CH-1 REC/PB
CH-1 REC VR (Y)
IC2 (2/3)
RX DATA
BUFFER
Q2
IC401
L:RX JACK
H:RX DATA REC
CH-1 DOLBY SIG (Y)
ATT
IC51 (1/2)
HEAD PHONE AMP
Q7
MUTE
Q52
CH-1 METER DRIVE
RVS1 METER CARIB
Q51
H:POWER ON MUTE
IC3 (1/2)
LINE AMP
RV1 LIMITER LEVEL
Q3-Q5
LIMITER
H:LIMITER OFF
D5
D4
Q6
+12V
TP501
Q501, 502
REG SWITCH
Q503
POWER ON MUTE
+12V
+11.7V
H:POWER ON MUTE
H:AUDIO MUTE
Q53
BUFFER
MONITOR SELECT IN (X)
MONITOR OUT (X)
CH-1 MONITOR (X)
CH-1 HEADPHONE (X)
CH-1 METER
METER LAMP
CH-1 REC SIG IN (X)
RV152 CH-1 REC LEVEL
Q154
CH-1 REC MUTE
IC151 (2/2)
CH-1 REC EQ AMP
RV151 CH-1 REC EQ
LV152 CH-1 REC EQ
Q151
CH-1 REC MUTE
IC151 (1/2)
CH-1 INV AMP
TP152
C152, R151
CONSTANT CURRENT
TP151
C151 LV151
BIAS TRAP
LV151 BIAS TRAP (REC)
Q101
Q103
CH-1 HEAD (Y)
CH-1 HEAD (X)
TP101 TP102
H:AUDIO MUTE
IC101 (1/2)
CH-1 PB AMP
Q105
RV101 PB FREQ RESPONSE (7kHz)
TP103
H. P. F
IC102 (1/2)
CH-1 PB AMP
Q106
H:SEARCH X2
RV103 TAPE PB LEVEL
RV102 PB FREQ RESPONSE (15kHz)
LV101 PB EQ
H:POWER ON MUTE
Q54
MUTE
IC2 (3/3)
L:AUDIO CH-1 EE
Q8
BUFFER
CH-1 DOLBY SIG (X)
L:AUDIO CH-1 REC
Q402
Q401
L:AUDIO CH-1 EE
L:AUDIO CH-2 EE
L:AUDIO MUTE
Q403
H:AUDIO MUTE
H:SEARCH X2
CP-128
SY-108
VO-18/A
RY601
RV601 CH-1 BIAS CURRENT ADJ
RV602 CH-2 BIAS CURRENT ADJ
LV601 AUDIO ERASE F ADJ
Q603
REG
+12V
CP602
BIAS OSC
LV602 DUB BIAS F ADJ
CH-1 ERASE (X)
TP602
CH-1 ERASE (Y)
TP603
Q606
Q607
L:AUDIO CH-1 REC
CH-2 ERASE (Y)
CH-1 ERASE (X)
CP601
FULL ERASE OSC
Q608
REG
+12V
RV604 FULL ERASE OSC LEVEL
C610 C611 C612 C613
FULL ERASE F ADJ
Q602
Q601
L:AUDIO CH-2 REC
FULL ERASE (X)
TP601
FULL ERASE (Y)
CN1015 (2/3) AUDIO LINE CH-2/R IN
Q101
BUFFER
CP-128 (2/3)
CH-2 AUDIO IN
IC202 (1/3)
IC202 (2/3)
CH-2 REC VR (X)
ATT
Q208
BUFFER
MT-29 (2/3)
AUDIO CH-2 REC VR
S1003 AUDIO LIMITER SW
CH-2 REC VR (Y)
H:LIMITER OFF
CN1020 AUDIO CH-2 MIC JACK
MC-28 (2/2)
CH-2 MIC IN
IC1
MIC AMP
L:CH-2 MIC IN
TV AUDIO IN
H:TV IN
VO-18/A
KY-105F/B
Q252
CH-2 METER DRIVE
RV251 METER CARIB
CH-2 METER
IC3 (2/2)
LINE AMP
Q251
MUTE
H:POWER ON MUTE
RV201 LIMITER LEVEL
Q201-203
LIMITER
H:LIMITER OFF
D202
Q204
CH-2 DOLBY SIG (Y)
RV301 CROSS TALK CANCEL
Q206
MUTE
H:AUDIO MUTE
ATT
IC51 (2/2)
HEAD PHONE AMP
Q305
CROSS TALK CANCELLER
CH-2 MONITOR (X)
CH-2 HEADPHONE (X)
Q55
MUTE
H:POWER ON MUTE
CH-2 REC SIG (X)
RV352 CH-2 REC LEVEL
Q354
CH-2 REC MUTE
IC351 (2/2)
CH-2 REC EQ AMP
RV351 CH-2 REC EQ
LV352 CH-2 REC EQ
Q351
CH-2 REC MUTE
IC351 (1/2)
CH-2 INV AMP
TP352
C352, R351
CONSTANT CURRENT
TP351
C351 LV351
BIAS TRAP
LV351 BIAS TRAP (REC)
Q301
Q303
CH-2 HEAD (Y)
AUDIO CH-2 REC/PB
DUS-92(2/3)
DUS-147 (2/3)
CH-2 HEAD (X)
TP301 TP302
IC101 (2/2)
CH-2 PB AMP
Q304
LV301 DUB BIAS TRAP
RV302 PB FREQ RESPONSE (7kHz)
TP303
H. P. F
IC102 (2/2)
CH-2 PB AMP
Q306
H:SEARCH X2
RV304 PB LEVEL
RV303 PB FREQ RESPONSE (15kHz)
LV302 PB EQ
IC202 (3/3)
L:AUDIO CH-2 EE
Q207
BUFF
CH-2 DOLBY SIG (X)
L:AUDIO CH-2 REC
Q452
Q451
Q453
IC404
IC401
L:AUDIO CH-2 REC
H:AUDIO DUB
VO-1
AU-82B
VO-7800
VO-7850

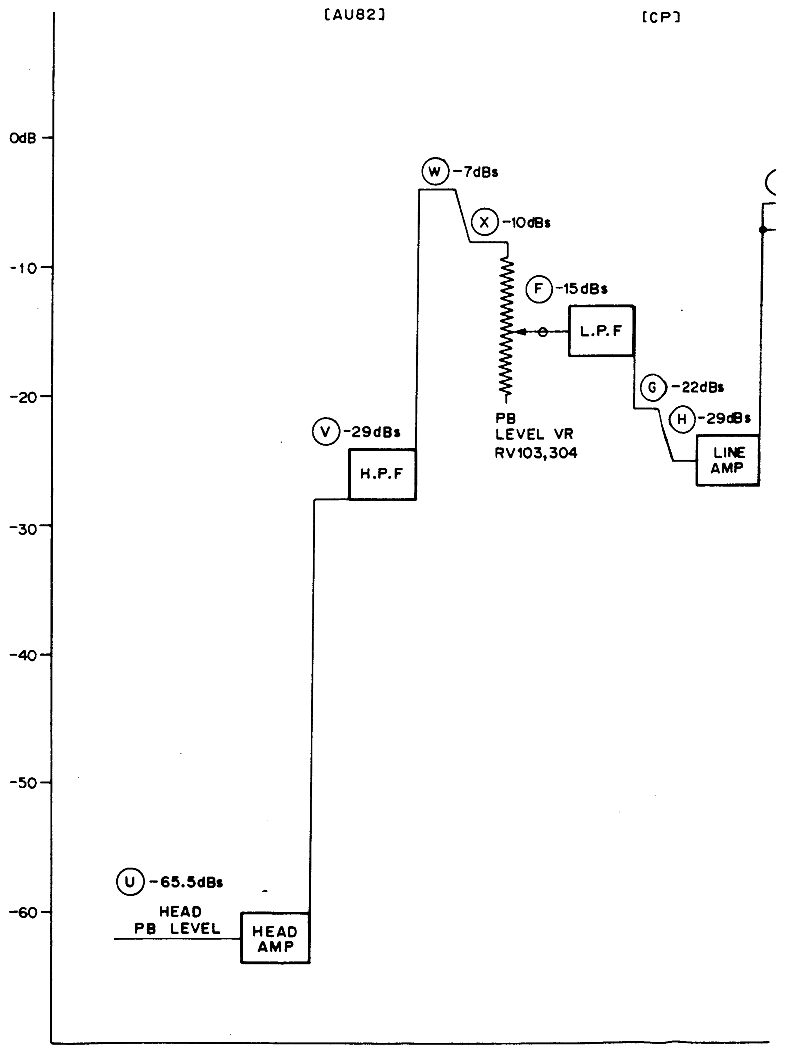

MT-29 (1/3)
AUDIO CH-1 REC VR
CH-1 REC VR
IC2 (2/3)
H:POWER ON MUTE
Q52
CH-1 METER DRIVE
Q51
MUTE
RV51 METER CARIB
CH-1 METER
IC3 (1/2)
LINE AMP
LIMITER
Q3-Q5
RV1 LIMITER LEVEL
H:LIMITER OFF
Q1
BUFFER
RX DATA
CN1022 RX-DATA JACK
IF-132
L:RX JACK
H:RX DATA REC
IC401
Q2
ATT
IC51 (1/2)
HEAD PHONE AMP
CH-1 DOLBY SIG
Q7
MUTE
H1003 AUDIO CH-1 REC/PB
DUS-92(1/3)
DUS-147 (1/3)
CH-1 HEAD
TP101
TP102
H:AUDIO MUTE
IC101 (1/2)
CH-1 PB AMP
TP103
H.P.F
IC102 (1/2)
CH-1 PB AMP
RV103 TAPE PB LEVEL
RV102 PB FREQ RESPONSE (15kHz)
LV101 PB EQ
RV101 PB FREQ RESPONSE (7kHz)
Q105
Q106
H:SEARCH X2
Q54
MUTE
H:POWER ON MUTE
IC2 (3/3)
L:AUDIO CH-1 EE
Q8
BUFFER
CH-1 DOLBY SIG
+12V
TP501
Q501 502
REG SWITCH
Q503
POWER ON MUTE
H:POWER ON MUTE
H:AUDIO MUTE
+11.7V
METER LAMP
MONITOR SELECT IN
Q53
BUFFER
MONITOR OUT
CH-1 MONITOR
CH-1 HEADPHONE
DC-31/A
CP-128
KY-105F/B
VO-19/A
ME1001 AUDIO CH-1
ME1002 AUDIO CH-2
MT-29 (3/3)
RY601
RV601 CH-1 BIAS CURRENT ADJ
RV602 CH-2 BIAS CURRENT ADJ
CP602
BIAS OSC
Q603
REG
LV602 DUB BIAS F ADJ
TP602
CH-1 ERASE
CH-2 ERASE
TP603
Q606
Q607
L:AUDIO CH-1 REC
LV601 AUDIO ERASE F ADJ
DUS-147 (3/3)
DUS-92 (3/3)
H1003 CH-1 ERASE
H1003 CH-2 ERASE
CP601
FULL ERASE OSC
Q608
REG
RV604 FULL ERASE OSC LEVEL
FULL ERASE F ADJ
Q601
Q602
L:AUDIO CH-2 REC
TP601
FULL ERASE
EC-28
H1002 FULLERASE
Q252
CH-2 METER DRIVE
RV251 METER CARIB
CH-2 METER
IC3 (2/2)
LINE AMP
Q251
MUTE
H:POWER ON MUTE
RV201 LIMITER LEVEL
LIMITER
Q201-203
H:LIMITER OFF
D202
Q204
MT-29 (2/3)
AUDIO CH-2 REC VR
S1003 AUDIO LIMITER SW
CH-2 REC VR
H:LIMITER OFF
IC202 (2/3)
CH-2 REC VR
Q208
BUFFER
CH-2 DOLBY SIG
RV301 CROSS TALK CANCEL
Q305
CROSS TALK CANCELLER
Q206
MUTE
H:AUDIO MUTE
IC51 (2/2)
HEAD PHONE AMP
CH-2 MONITOR
CH-2 HEADPHONE
Q55
MUTE
H:POWER ON MUTE
AUDIO CH-2 REC/PB
DUS-92(2/3)
DUS-147 (2/3)
CH-2 HEAD
TP301
TP302
IC101 (2/2)
CH-2 PB AMP
TP303
H.P.F
IC102 (2/2)
CH-2 PB AMP
RV304 PB LEVEL
RV303 PB FREQ RESPONSE (15kHz)
LV302 PB EQ
RV302 PB FREQ RESPONSE (7kHz)
LV301 DUB BIAS TRAP
Q304
Q306
H:SEARCH X2
IC202 (3/3)
L:AUDIO CH-2 EE
Q207
BUFF
CH-2 DOLBY SIG
Q301
Q303
IC404
IC401
L:AUDIO CH-2 REC
H:AUDIO DUB
VO-19/A
AU-82B
VO-7600
VO-7630
IC1
LPF
ATT
OUT PUT AMP
CH-1 REC SIG
CH-1 SIG
CH-1 LINE
CH-2 REC SIG
CH-2 SIG
CH-2 LINE
AU-82B
AUDIO LINE CH-1/L OUT
AUDIO LINE CH-2/R OUT
CN1015 (3/3)
CP-128 (3/3)

AUDIO LEVEL DIAGRAM

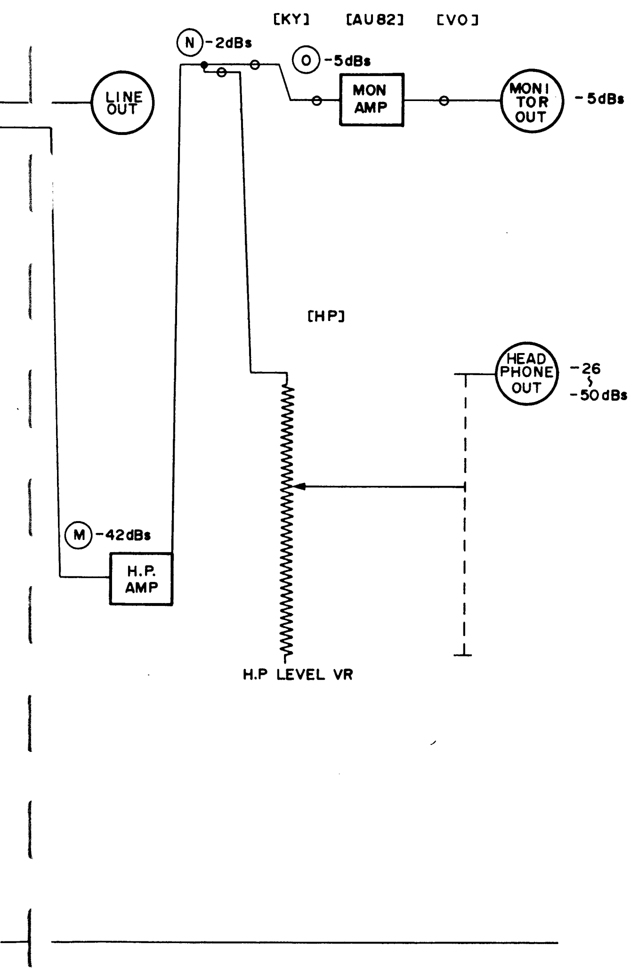
Audio Level Diagram EE, REC


0dB
-10
-20
-30
-40
-50
-60
[CP]
LINE IN
A -10dBs
[VO]
TV IN
B -20dBs
[AU82][MT]
D -23dBs
REC VR
E -36dBs
LINE AMP
[MC]
MIC IN
C -60dBs
MIC AMP
[AU82]
[CP]
F -15dBs
LPF
G -22dBs
H -29dBs
LINE AMP
I -5dBs
J -20dBs
REC AMP
REC LEVEL VR RV152,352
K +4dBs
CON-STANT CUR-RENT
L -4dBs
HEAD REC LEVEL
[AU82]
LINE OUT
M -42dBs
H.P. AMP
N -2dBs
[KY]
O -5dBs
[AU82]
MON AMP
[VO]
MONI TOR OUT
-5dBs
[HP]
HEAD PHONE OUT
-26 ~ -50dBs
H.P LEVEL VR

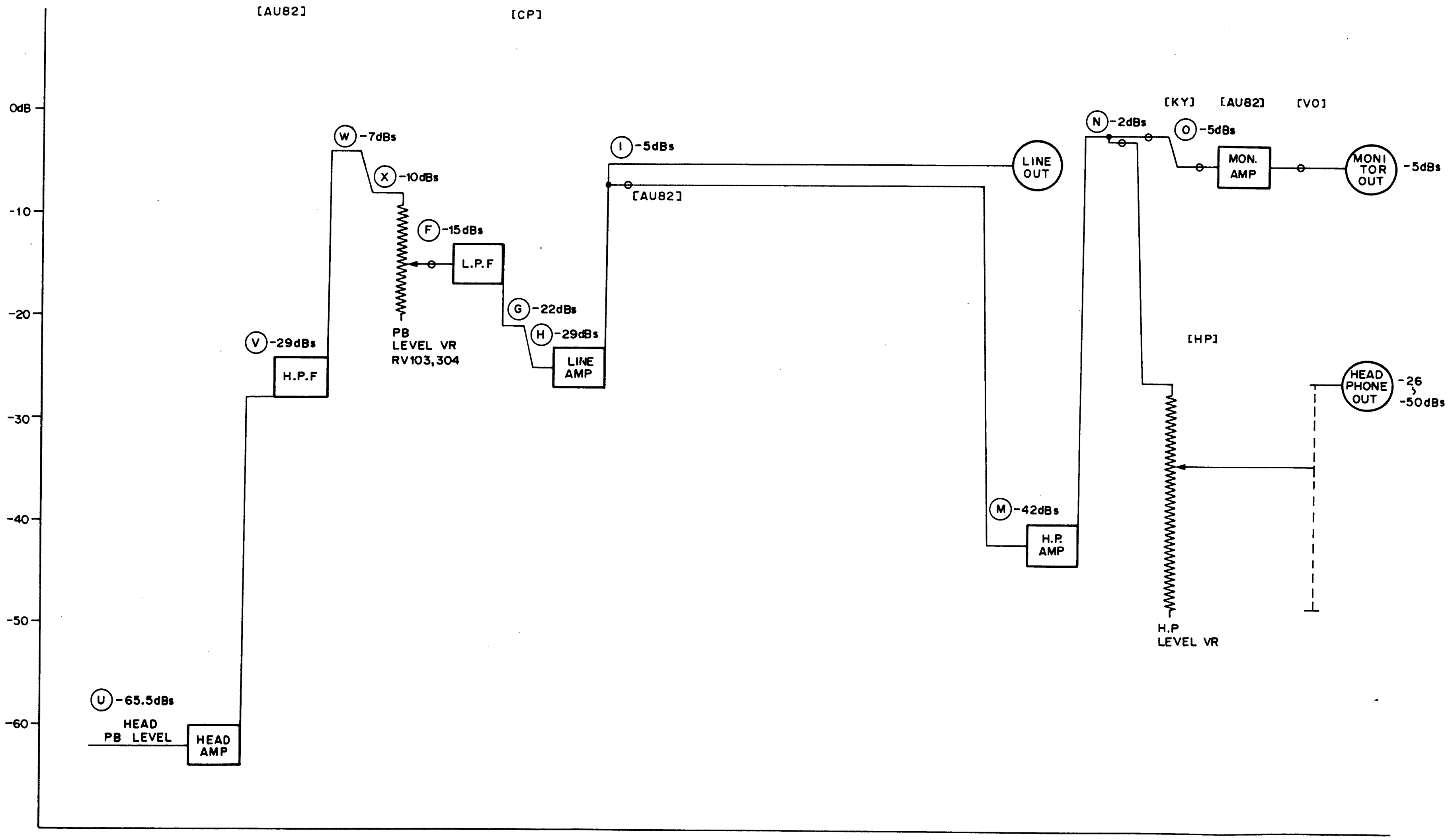
Au


[AU82]
[CP]
0dB
-10
-20
-30
-40
-50
-60
W -7dBs
X -10dBs
F -15dBs
L.P.F
G -22dBs
H -29dBs
LINE AMP
PB LEVEL VR RV103,304
V -29dBs
H.P.F
U -65.5dBs
HEAD PB LEVEL
HEAD AMP

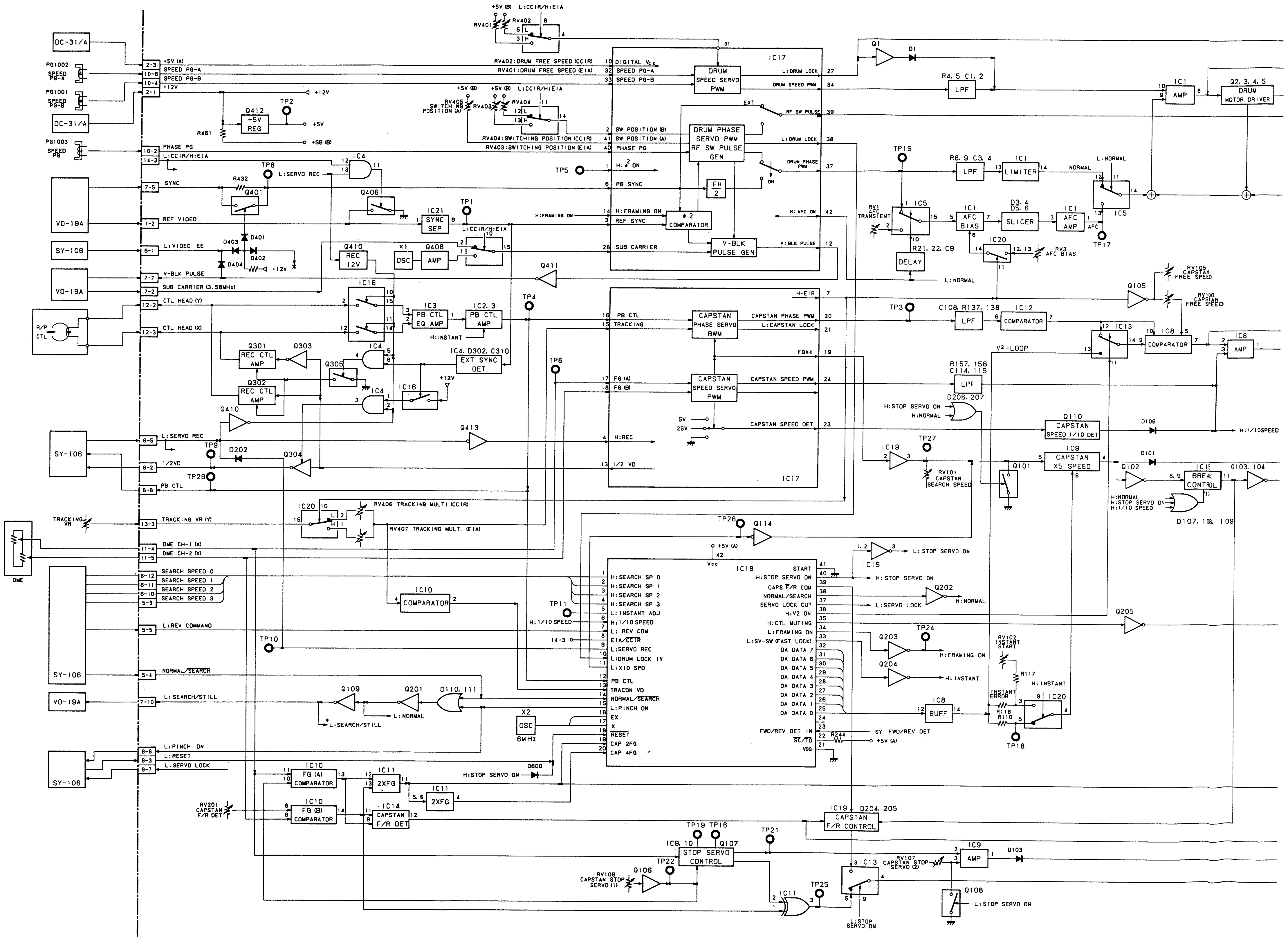
REC

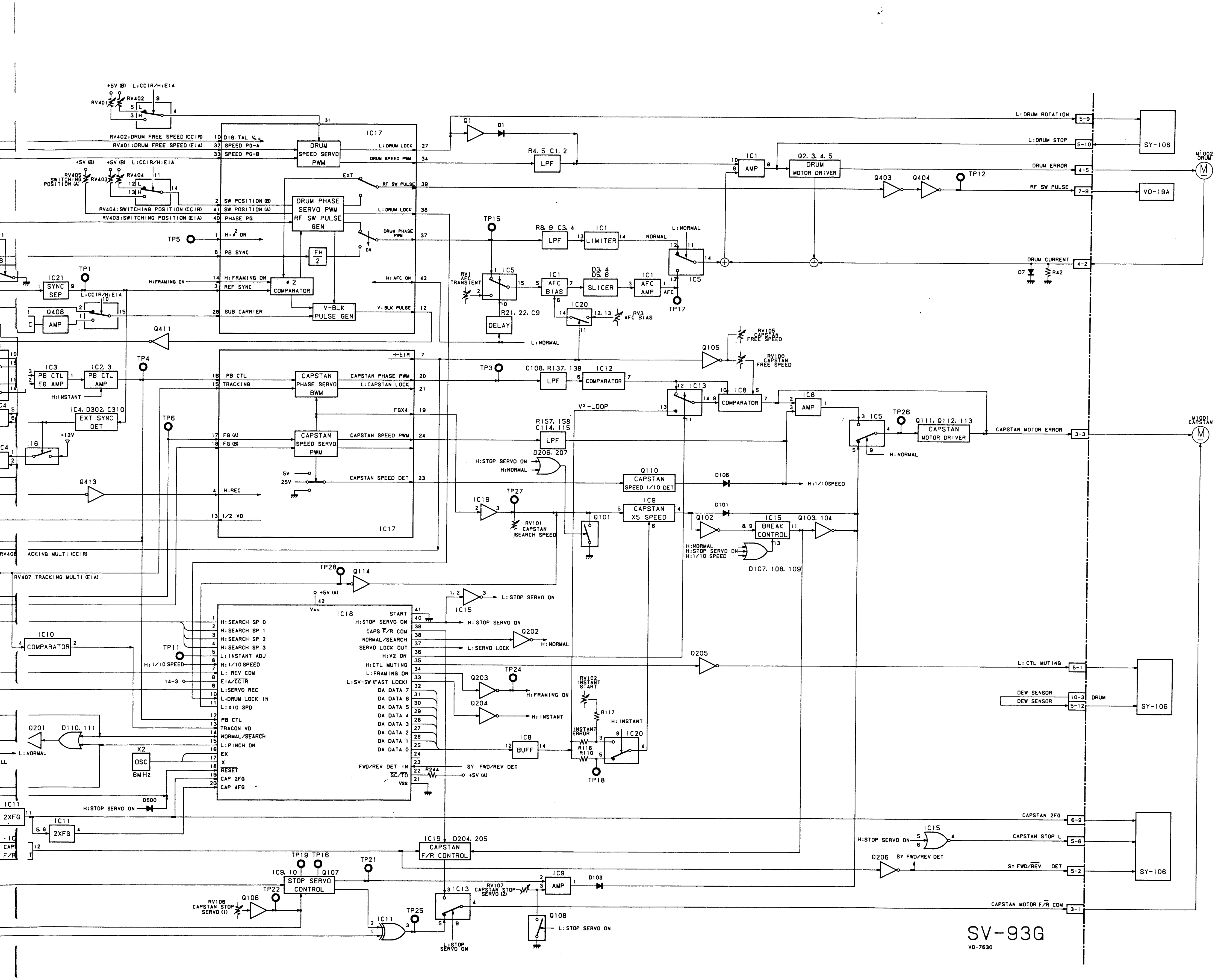

[KY]
[AU82]
[VO]
N -2dBs
O -5dBs
LINE OUT
MON AMP
MONI TOR OUT
-5dBs
[HP]
HEAD PHONE OUT
-26 ~ -50dBs
M -42dBs
H.P. AMP
H.P LEVEL VR

Audio Level Diagram PB

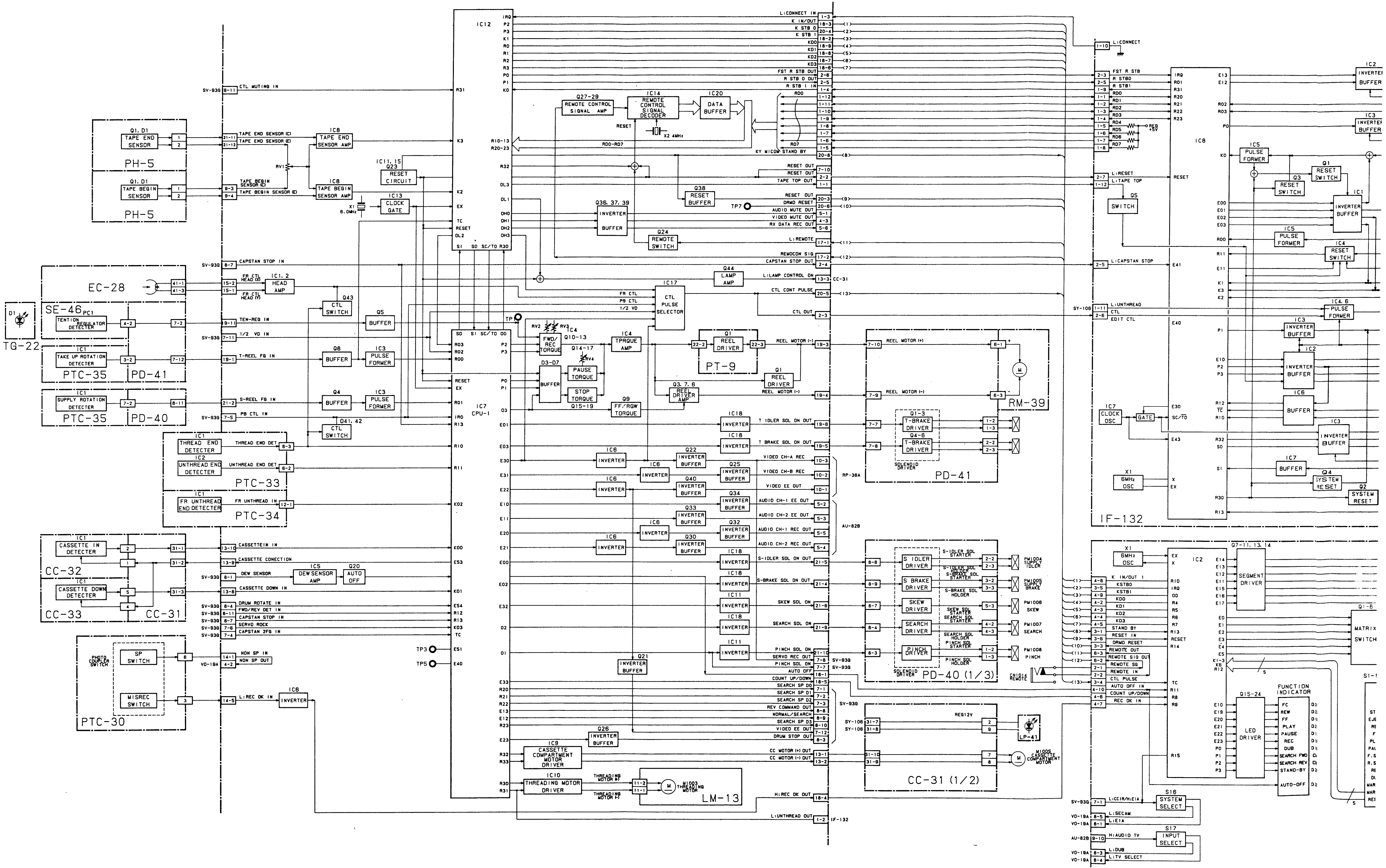

[AU82]
[CP]
0dB
-10
-20
-30
-40
-50
-60
U -65.5dBs
HEAD PB LEVEL
HEAD AMP
V -29dBs
H.P.F
W -7dBs
X -10dBs
F -15dBs
L.P.F
PB LEVEL VR RV103,304
G -22dBs
H -29dBs
LINE AMP
I -5dBs
[AU82]
LINE OUT
M -42dBs
H.P. AMP
N -2dBs
[KY]
[AU82]
[VO]
O -5dBs
MON. AMP
MONI TOR OUT
-5dBs
[HP]
HEAD PHONE OUT
-26 ~ -50dBs
H.P LEVEL VR

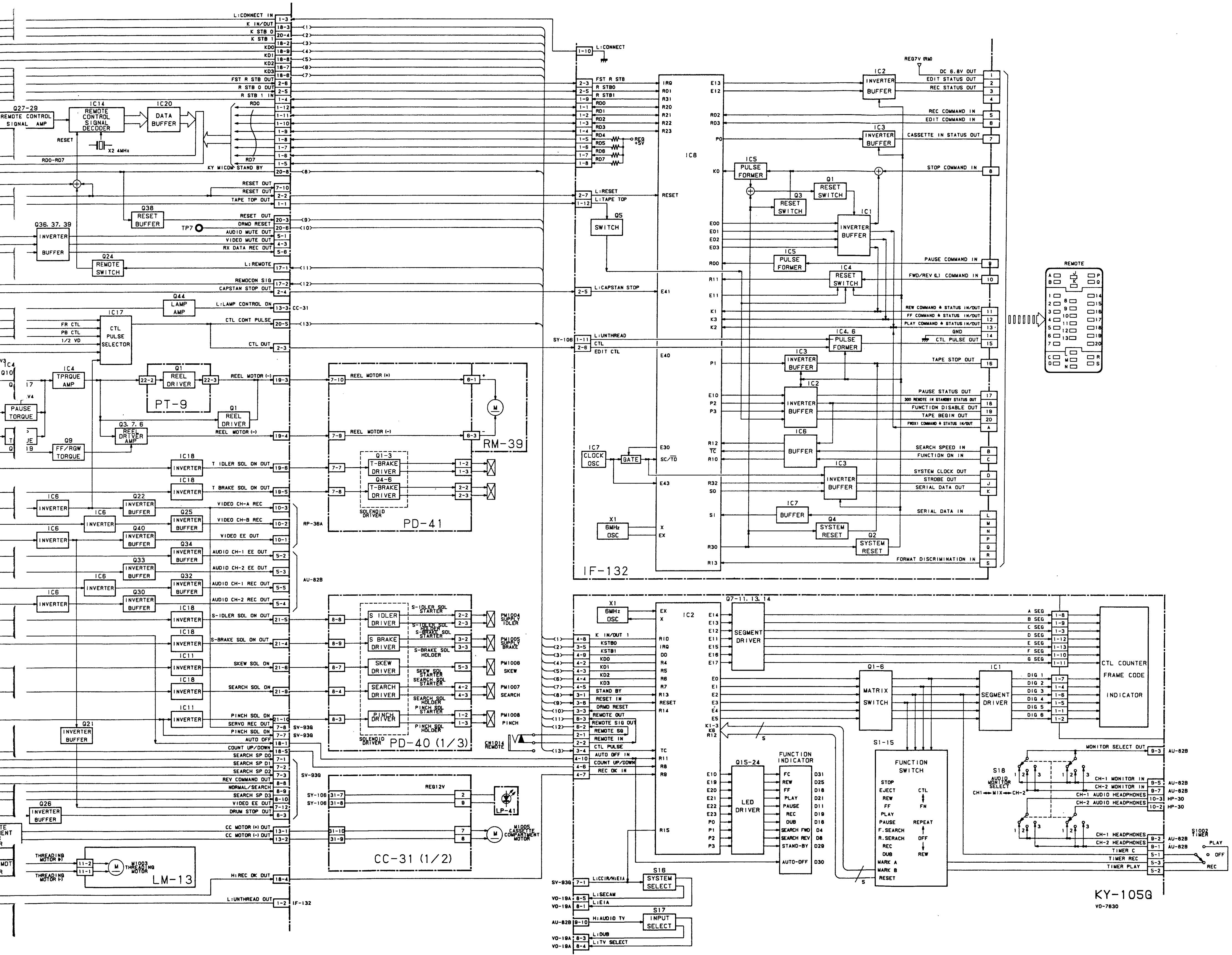
SERVO SYSTEM BLOCK DIAGRAM


DC-31/A
PG1002 SPEED PG-A
PG1001 SPEED PG-B
DC-31/A
PG1003 SPEED PG
VO-19A
SY-106
VO-19A
R/P CTL
SY-106
TRACKING VR
DME
SY-106
VO-19A
SY-106
+5V (A)
SPEED PG-A
SPEED PG-B
+12V
Q412 +5V REG
TP2
R481
PHASE PG
L:CCIR/H:EIA
SYNC
REF VIDEO
L:VIDEO EE
V-BLK PULSE
SUB CARRIER (3.58MHz)
CTL HEAD (Y)
CTL HEAD (X)
L:SERVO REC
1/2VD
PB CTL
TRACKING VR (Y)
DME CH-1 (X)
DME CH-2 (X)
SEARCH SPEED 0
SEARCH SPEED 1
SEARCH SPEED 2
SEARCH SPEED 3
L:REV COMMAND
NORMAL/SEARCH
L:SEARCH/STILL
L:PINCH ON
L:RESET
L:SERVO LOCK
IC4
TP8
L:SERVO REC
R432
Q401
Q406
D401
D403
D402
D404
IC21 SYNC SEP
TP1
Q410 REC 12V
×1 OSC
Q408 AMP
Q411
IC16
IC3 PB CTL EQ AMP
IC2, 3 PB CTL AMP
H:INSTANT
Q301 REC CTL AMP
Q303
Q305
Q302 REC CTL AMP
IC4
IC16
IC4, D302, C310 EXT SYNC DET
TP4
TP6
Q410
Q413
TP9
D202
Q304
TP29
IC20
RV406 TRACKING MULTI (CCIR)
RV407 TRACKING MULTI (EIA)
IC10 COMPARATOR
TP10
TP11
Q109
Q201
D110, 111
L:NORMAL
L:SEARCH/STILL
X2 OSC 6MHz
IC10 FG (A) COMPARATOR
IC10 FG (B) COMPARATOR
RV201 CAPSTAN F/R DET
IC11 2XFG
IC11 2XFG
IC14 CAPSTAN F/R DET
H:STOP SERVO ON
D600
+5V (B) L:CCIR/H:EIA
RV401 RV402
RV402:DRUM FREE SPEED (CCIR)
RV401:DRUM FREE SPEED (EIA)
RV405 SWITCHING POSITION (A)
RV403 RV404
RV404:SWITCHING POSITION (CCIR)
RV403:SWITCHING POSITION (EIA)
TP5
H:FRAMING ON
IC17
DIGITAL VCC
SPEED PG-A
SPEED PG-B
SW POSITION (B)
SW POSITION (A)
PHASE PG
H:CCIR ON
PB SYNC
H:FRAMING ON
REF SYNC
SUB CARRIER
DRUM SPEED SERVO PWM
EXT
RF SW PULSE
DRUM PHASE SERVO PWM RF SW PULSE GEN
FH/2
#2 COMPARATOR
V-BLK PULSE GEN
L:DRUM LOCK
DRUM SPEED PWM
DRUM PHASE PWM
H:AFC ON
V:BLK PULSE
PB CTL
TRACKING
CAPSTAN PHASE SERVO BWM
CAPSTAN PHASE PWM
L:CAPSTAN LOCK
H-EIR
FGX4
FG (A)
FG (B)
CAPSTAN SPEED SERVO PWM
CAPSTAN SPEED PWM
5V
25V
CAPSTAN SPEED DET
H:REC
1/2 VD
IC17
TP28
Q114
+5V (A)
IC18
H:SEARCH SP 0
H:SEARCH SP 1
H:SEARCH SP 2
H:SEARCH SP 3
L:INSTANT ADJ
H:1/10 SPEED
L:REV COM
EIA/CCIR
L:SERVO REC
L:DRUM LOCK IN
L:X10 SPD
PB CTL
TRACON VD
NORMAL/SEARCH
L:PINCH ON
EX
X
RESET
CAP 2FG
CAP 4FG
START
H:STOP SERVO ON
CAPS F/R COM
NORMAL/SEARCH
SERVO LOCK OUT
H:V2 ON
H:CTL MUTING
L:FRAMING ON
L:SV-SW (FAST LOCK)
DA DATA 7
DA DATA 6
DA DATA 5
DA DATA 4
DA DATA 3
DA DATA 2
DA DATA 1
DA DATA 0
FWD/REV DET IN
SC/TC
VSS
R244
SY FWD/REV DET
+5V (A)
H:1/10 SPEED
14-3
Q1
D1
R4, 5 C1, 2 LPF
IC1 AMP
Q2, 3, 4, 5 DRUM MOTOR DRIVER
TP15
R8, 9 C3, 4 LPF
IC1 LIMITER
NORMAL
L:NORMAL
IC5
RV1 AFC TRANSIENT
IC5
IC1 AFC BIAS
D3, 4 D5, 6 SLICER
IC1 AFC AMP
AFC
TP17
R21, 22, C9
DELAY
IC20
RV3 AFC BIAS
L:NORMAL
Q105
RV105 CAPSTAN FREE SPEED
RV110 CAPSTAN FREE SPEED
TP3
C108, R137, 138 LPF
IC12 COMPARATOR
IC13
IC8 COMPARATOR
IC8 AMP
V2-LOOP
R157, 158 C114, 115 LPF
H:STOP SERVO ON
H:NORMAL
D206, 207
Q110 CAPSTAN SPEED 1/10 DET
D106
H:1/10SPEED
IC19
TP27
RV101 CAPSTAN SEARCH SPEED
Q101
IC9 CAPSTAN X5 SPEED
D101
Q102
IC15 BREAK CONTROL
Q103, 104
H:NORMAL
H:STOP SERVO ON
H:1/10 SPEED
D107, 108, 109
IC15
L:STOP SERVO ON
H:STOP SERVO ON
Q202
L:SERVO LOCK
H:NORMAL
Q205
Q203
TP24
H:FRAMING ON
Q204
H:INSTANT
RV102 INSTANT START
R117
H:INSTANT
INSTANT ERROR
R116
R110
IC20
TP18
IC8 BUFF
IC19 D204, 205 CAPSTAN F/R CONTROL
TP19 TP16
IC9, 10 Q107
STOP SERVO CONTROL
TP21
TP22
RV108 CAPSTAN STOP SERVO (1)
Q106
IC11
TP25
IC13
RV107 CAPSTAN STOP SERVO (2)
IC9 AMP
D103
Q108
L:STOP SERVO ON
L:STOP SERVO ON


+5V (B)
L:CCIR/H:EIA
RV401
RV402
RV402:DRUM FREE SPEED (CCIR)
RV401:DRUM FREE SPEED (EIA)
RV405 SWITCHING POSITION (A)
RV403
RV404
RV404:SWITCHING POSITION (CCIR)
RV403:SWITCHING POSITION (EIA)
IC17
DIGITAL Vcc
SPEED PG-A
SPEED PG-B
DRUM SPEED SERVO PWM
L:DRUM LOCK
DRUM SPEED PWM
EXT
RF SW PULSE
SW POSITION (B)
SW POSITION (A)
PHASE PG
DRUM PHASE SERVO PWM RF SW PULSE GEN
DRUM PHASE PWM
ON
TP5
H:ϕ2 ON
PB SYNC
FH/2
TP1
IC21
SYNC SEP
H:FRAMING ON
REF SYNC
ϕ2 COMPARATOR
H:AFC ON
Q408
AMP
SUB CARRIER
V-BLK PULSE GEN
V:BLK PULSE
Q411
H-EIR
TP4
IC3
PB CTL EQ AMP
IC2, 3
PB CTL AMP
H:INSTANT
PB CTL
TRACKING
CAPSTAN PHASE SERVO BWM
CAPSTAN PHASE PWM
L:CAPSTAN LOCK
FGX4
IC4, D302, C310
EXT SYNC DET
+12V
TP6
FG (A)
FG (B)
CAPSTAN SPEED SERVO PWM
CAPSTAN SPEED PWM
5V
25V
CAPSTAN SPEED DET
Q413
H:REC
1/2 VD
RV406 TRACKING MULTI (CCIR)
RV407 TRACKING MULTI (EIA)
Q1
D1
R4, 5 C1, 2
LPF
IC1
AMP
Q2, 3, 4, 5
DRUM MOTOR DRIVER
Q403
Q404
TP12
L:DRUM ROTATION
L:DRUM STOP
DRUM ERROR
RF SW PULSE
SY-106
M1002 DRUM
VO-19A
TP15
R8, 9 C3, 4
LIMITER
NORMAL
L:NORMAL
IC5
RV1 AFC TRANSIENT
AFC BIAS
D3, 4 D5, 6
SLICER
AFC AMP
AFC
TP17
DRUM CURRENT
D7
R42
R21, 22, C9
DELAY
IC20
RV3 AFC BIAS
RV105 CAPSTAN FREE SPEED
Q105
RV100 CAPSTAN FREE SPEED
TP3
C108, R137, 138
IC12
COMPARATOR
IC13
IC8
V²-LOOP
TP26
Q111, Q112, 113
CAPSTAN MOTOR DRIVER
CAPSTAN MOTOR ERROR
M1001 CAPSTAN
H:NORMAL
R157, 158 C114, 115
D206, 207
H:STOP SERVO ON
Q110
CAPSTAN SPEED 1/10 DET
D106
H:1/10SPEED
IC19
TP27
RV101 CAPSTAN SEARCH SPEED
Q101
IC9
CAPSTAN X5 SPEED
D101
Q102
IC15
BREAK CONTROL
Q103, 104
H:1/10 SPEED
D107, 108, 109
TP28
Q114
+5V (A)
Vcc
IC18
H:SEARCH SP 0
H:SEARCH SP 1
H:SEARCH SP 2
H:SEARCH SP 3
L:INSTANT ADJ
H:1/10 SPEED
L: REV COM
EIA/CCIR
L:SERVO REC
L:DRUM LOCK IN
L:X10 SPD
PB CTL
TRACON VD
NORMAL/SEARCH
L:PINCH ON
EX
X
RESET
CAP 2FG
CAP 4FG
START
H:STOP SERVO ON
CAPS F/R COM
NORMAL/SEARCH
SERVO LOCK OUT
H:V2 ON
H:CTL MUTING
L:FRAMING ON
L:SV-SW (FAST LOCK)
DA DATA 7
DA DATA 6
DA DATA 5
DA DATA 4
DA DATA 3
DA DATA 2
DA DATA 1
DA DATA 0
FWD/REV DET IN
SC/TO
VSS
R244
L:STOP SERVO ON
Q202
L:SERVO LOCK
Q205
L:CTL MUTING
TP24
Q203
H:FRAMING ON
Q204
H:INSTANT
RV102 INSTANT START
R117
INSTANT ERROR
R116
R110
BUFF
TP18
SY FWD/REV DET
DEW SENSOR
DEW SENSOR
DRUM
IC10
COMPARATOR
TP11
14-3
Q201
D110, 111
L:NORMAL
X2
OSC
6MHz
D600
IC11
2XFG
IC19
D204, 205
CAPSTAN F/R CONTROL
CAPSTAN 2FG
CAPSTAN STOP L
Q206
SY FWD/REV DET
TP19
TP16
IC9, 10
Q107
STOP SERVO CONTROL
TP21
TP22
RV108 CAPSTAN STOP SERVO (1)
Q106
TP25
RV107 CAPSTAN STOP SERVO (2)
D103
Q108
L:STOP SERVO ON
CAPSTAN MOTOR F/R COM
5-9
5-10
4-5
7-9
4-2
3-3
5-1
10-3
5-12
6-9
5-6
5-2
3-1
SV-93G
VO-7630

SYSTEM CONTROL BLOCK DIAGRAM


IC12
IC7 CPU-1
IC8
IC14 REMOTE CONTROL SIGNAL DECODER
IC20 DATA BUFFER
Q27-29 REMOTE CONTROL SIGNAL AMP
IC17 CTL PULSE SELECTOR
IC8 TAPE END SENSOR AMP
IC8 TAPE BEGIN SENSOR AMP
Q1, D1 TAPE END SENSOR
Q1, D1 TAPE BEGIN SENSOR
PH-5
PH-5
IC11, 15 Q23 RESET CIRCUIT
IC13 CLOCK GATE
X1 6.0MHz
EC-28
IC1, 2 HEAD AMP
Q43 CTL SWITCH
Q5 BUFFER
SE-46
TENTION REGULATOR DETECTER
TG-22
IC1 TAKE UP ROTATION DETECTER
PTC-35
PD-41
IC1 SUPPLY ROTATION DETECTER
PTC-35
PD-40
Q8 BUFFER
IC3 PULSE FORMER
Q4 BUFFER
Q41, 42 CTL SWITCH
IC1 THREAD END DETECTER
IC2 UNTHREAD END DETECTER
PTC-33
IC1 FR UNTHREAD END DETECTER
PTC-34
IC1 CASSETTE IN DETECTER
CC-32
IC1 CASSETTE DOWN DETECTER
CC-33
CC-31
IC5 DEW SENSOR AMP
Q20 AUTO OFF
PHOTO COUPLER SWITCH
SP SWITCH
MISREC SWITCH
PTC-30
IC6 INVERTER
Q36, 37, 39 INVERTER BUFFER
Q38 RESET BUFFER
Q24 REMOTE SWITCH
Q44 LAMP AMP
IC4 FWD/REC TORQUE
D3-D7 BUFFER
Q14-17 PAUSE TORQUE
Q15-19 STOP TORQUE
IC4 TPRQUE AMP
Q9 FF/RGW TORQUE
Q1 REEL DRIVER
PT-9
Q3, 7, 6 REEL DRIVER AMP
Q1 REEL DRIVER
RM-39
Q1-3 T-BRAKE DRIVER
Q4-6 T-BRAKE DRIVER
SOLENOID DRIVER
PD-41
IC18 INVERTER
IC6 INVERTER
Q22 INVERTER BUFFER
Q25 INVERTER BUFFER
Q40 INVERTER BUFFER
Q34 INVERTER BUFFER
Q33 INVERTER BUFFER
Q32 INVERTER BUFFER
Q30 INVERTER BUFFER
RP-38A
AU-82B
S IDLER DRIVER
S BRAKE DRIVER
SKEW DRIVER
SEARCH DRIVER
PINCH DRIVER
PD-40 (1/3)
PM1004 SUPPLY IDLER
PM1005 SUPPLY BRAKE
PM1006 SKEW
PM1007 SEARCH
PM1008 PINCH
CN1014 REMOTE
Q21 INVERTER BUFFER
Q26 INVERTER BUFFER
IC9 CASSETTE COMPARTMENT MOTOR DRIVER
IC10 THREADING MOTOR DRIVER
M1003 THREADING MOTOR
LM-13
REG12V
LP-41
M1005 CASSETTE COMPARTMENT MOTOR
CC-31 (1/2)
TP3
TP5
TP7
SV-93G
VD-19A
SY-10G
IF-132
IC8
IC5 PULSE FORMER
Q1 RESET SWITCH
Q3 RESET SWITCH
Q5 SWITCH
IC1 INVERTER BUFFER
IC5 PULSE FORMER
IC4 RESET SWITCH
IC4, 6 PULSE FORMER
IC3 INVERTER BUFFER
IC2 INVERTER BUFFER
IC6 BUFFER
IC7 CLOCK OSC
GATE
IC3 INVERTER BUFFER
IC7 BUFFER
Q4 SYSTEM RESET
Q2 SYSTEM RESET
X1 6MHz OSC
IF-132
IC2 INVERTER BUFFER
IC3 INVERTER BUFFER
X1 6MHz OSC
IC2
Q7-11, 13, 14 SEGMENT DRIVER
MATRIX SWITCH
Q15-24 LED DRIVER
FUNCTION INDICATOR
FC
REW
FF
PLAY
PAUSE
REC
DUB
SEARCH FWD
SEARCH REV
STAND-BY
AUTO-OFF
S16 SYSTEM SELECT
S17 INPUT SELECT
S1-1


Q27-29
REMOTE CONTROL SIGNAL AMP
IC14
REMOTE CONTROL SIGNAL DECODER
IC20
DATA BUFFER
X2 4MHz
RESET
RD0-RD7
L:CONNECT IN
K IN/OUT
K STB 0
K STB 1
KD0
KD1
KD2
KD3
FST R STB OUT
R STB 0 OUT
R STB 1 IN
RD0
RD7
KY MICON STAND BY
RESET OUT
TAPE TOP OUT
Q38
RESET BUFFER
TP7
DRMD RESET
AUDIO MUTE OUT
VIDEO MUTE OUT
RX DATA REC OUT
Q36, 37, 39
INVERTER
BUFFER
Q24
REMOTE SWITCH
L:REMOTE
REMOCON SIG
CAPSTAN STOP OUT
Q44
LAMP AMP
L:LAMP CONTROL ON
CC-31
CTL CONT PULSE
FR CTL
PB CTL
1/2 VD
IC17
CTL PULSE SELECTOR
CTL OUT
IC4
TPRQUE AMP
PAUSE TORQUE
Q1
REEL DRIVER
PT-9
Q3, 7, 6
REEL DRIVER AMP
Q9
FF/RQW TORQUE
REEL MOTOR (-)
REEL MOTOR (+)
RM-39
IC18
INVERTER
T IDLER SOL ON OUT
T BRAKE SOL ON OUT
Q1-3
T-BRAKE DRIVER
Q4-6
T-BRAKE DRIVER
SOLENOID DRIVER
PD-41
IC6
Q22
INVERTER BUFFER
Q25
Q40
Q33
Q34
Q32
Q30
VIDEO CH-A REC
VIDEO CH-B REC
VIDEO EE OUT
RP-36A
AUDIO CH-1 EE OUT
AUDIO CH-2 EE OUT
AUDIO CH-1 REC OUT
AUDIO CH-2 REC OUT
AU-82B
S-IDLER SOL ON OUT
S-BRAKE SOL ON OUT
SKEW SOL ON
SEARCH SOL ON
PINCH SOL ON
IC11
S IDLER DRIVER
S BRAKE DRIVER
SKEW DRIVER
SEARCH DRIVER
PINCH DRIVER
PD-40 (1/3)
PM1004 SUPPLY IDLER
PM1005 SUPPLY BRAKE
PM1006 SKEW
PM1007 SEARCH
PM1008 PINCH
CN1014 REMOTE
Q21
INVERTER BUFFER
SERVO REC OUT
AUTO OFF
COUNT UP/DOWN
SEARCH SP D0
SEARCH SP D1
SEARCH SP D2
REV COMMAND OUT
NORMAL/SEARCH
SEARCH SP D3
VIDEO EE OUT
DRUM STOP OUT
SV-93G
Q26
INVERTER BUFFER
REG12V
LP-41
CC MOTOR (+) OUT
CC MOTOR (-) OUT
M1005 CASSETTE COMPARTMENT MOTOR
CC-31 (1/2)
THREADING MOTOR (+)
THREADING MOTOR (-)
M1003 THREADING MOTOR
LM-13
H:REC OK OUT
L:UNTHREAD OUT
IF-132
L:CONNECT
FST R STB
R STB0
R STB1
RD0
RD1
RD2
RD3
RD4
RD5
RD6
RD7
REG +5V
L:RESET
L:TAPE TOP
Q5
SWITCH
L:CAPSTAN STOP
SY-106
L:UNTHREAD
CTL
EDIT CTL
IC7
CLOCK OSC
GATE
X1
6MHz OSC
IC8
IRQ
RESET
E41
E40
E30
SC/TD
E43
X
EX
IC5
PULSE FORMER
Q1
RESET SWITCH
Q3
RESET SWITCH
IC1
INVERTER BUFFER
IC4
RESET SWITCH
IC4, 6
PULSE FORMER
IC3
INVERTER BUFFER
IC2
IC6
BUFFER
IC7
BUFFER
Q4
SYSTEM RESET
Q2
SYSTEM RESET
REG7V
DC 6.8V OUT
EDIT STATUS OUT
REC STATUS OUT
REC COMMAND IN
EDIT COMMAND IN
CASSETTE IN STATUS OUT
STOP COMMAND IN
PAUSE COMMAND IN
FWD/REV (L) COMMAND IN
REW COMMAND & STATUS IN/OUT
FF COMMAND & STATUS IN/OUT
PLAY COMMAND & STATUS IN/OUT
GND
CTL PULSE OUT
TAPE STOP OUT
PAUSE STATUS OUT
300 REMOTE IN STANDBY STATUS OUT
FUNCTION DISABLE OUT
TAPE BEGIN OUT
FWD(+) COMMAND & STATUS IN/OUT
SEARCH SPEED IN
FUNCTION ON IN
SYSTEM CLOCK OUT
STROBE OUT
SERIAL DATA OUT
SERIAL DATA IN
FORMAT DISCRIMINATION IN
IF-132
REMOTE
X1
6MHz OSC
IC2
K IN/OUT 1
KSTB0
KSTB1
KD0
KD1
KD2
KD3
STAND BY
RESET IN
DRMD RESET
REMOTE OUT
REMOTE SIG OUT
REMOTE IN
CTL PULSE
AUTO OFF IN
COUNT UP/DOWN
REC OK IN
Q7-11, 13, 14
SEGMENT DRIVER
A SEG
B SEG
C SEG
D SEG
E SEG
F SEG
G SEG
Q1-6
MATRIX SWITCH
IC1
SEGMENT DRIVER
DIG 1
DIG 2
DIG 3
DIG 4
DIG 5
DIG 6
CTL COUNTER FRAME CODE INDICATOR
Q15-24
LED DRIVER
FUNCTION INDICATOR
FC
REW
FF
PLAY
PAUSE
REC
DUB
SEARCH FWD
SEARCH REV
STAND-BY
AUTO-OFF
S1-15
FUNCTION SWITCH
STOP
EJECT
REW
FF
PLAY
PAUSE
F.SEARCH
R.SEARCH
REC
DUB
MARK A
MARK B
RESET
CTL
FN
REPEAT
OFF
REW
MONITOR SELECT OUT
S18
AUDIO MONITOR SELECT
CH1 ← MIX → CH-2
CH-1 MONITOR IN
CH-2 MONITOR IN
CH-1 AUDIO HEADPHONES
CH-2 AUDIO HEADPHONES
HP-30
CH-1 HEADPHONES
CH-2 HEADPHONES
TIMER C
TIMER REC
TIMER PLAY
S1002 TIMER
PLAY
OFF
REC
S16
SYSTEM SELECT
L:CCIR/H:EIA
L:SECAM
L:EIA
S17
INPUT SELECT
H:AUDIO TV
L:DUB
L:TV SELECT
VO-19A
KY-105G
VO-7630

SECTION 13

SEMICONDUCTOR ELECTRODES

ここに記載されているIC、トランジスタ、ダイオードは、それぞれの機能を等価的に表わしたものです。したがって互換性を表わすものではありません。(互換性のない型名が併記されている事もあります。) 部品の交換をする時は、SPARE PARTSの章を参照して下さい。

ICs, transistors and diodes whoses functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

IC	PAGE
AN608P	13-3
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BX388	13-3
BX388L	13-3
BX1265L	13-3
BX3915A	13-3
CX134A	13-3
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CX188	13-4
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CX859	13-5
CX20061	13-5
CX22013	13-5
CXA1020P	13-5
HD10116	13-5
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LA4550	13-6
M54517P	13-6
M54529AP	13-6
M54543L	13-6
MB84013B	13-6
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MB88505P	13-7
MB88505PF	13-8
MB88525P	13-8
MC74HC244N	13-8

IC	PAGE
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TC40H000P	13-9
TC74HC244P	13-8
TC4001BP	13-9
TC4001UBP	13-9
TC4009UBP	13-9
TC4011BP	13-9
TC4013BP	13-10
TC4030BPHB	13-10
TC4051BP	13-10
TC4053BP	13-10
TC4053BPHB	13-10
TC4069UBF	13-10
TC4069UBP	13-10
TC4081BP	13-10
TC4528BP	13-10
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μPC324C	13-10
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μPD4053BC	13-10

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1S2835-T1	13-11
1SS123	13-11
2SA768	13-11
2SA771	13-11
2SA933	13-11
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2SA1175F	13-11
2SA1226	13-11
2SB733	13-11
2SB734	13-11
2SB739	13-11
2SC403SP	13-11
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2SC1826	13-11
2SC2223	13-11
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等価回路はICメーカーのData Bookに従いました。

The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

SEMICONDUCTOR INDEX

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2SD774	13-11
2SD788	13-11
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2SD998	13-11
2SD1111	13-11
2SD1682	13-11
2SK105A	13-11
2SK523	13-11
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DTC144ES	13-11

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1S1555S	13-12
1S2837	13-12
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1SS97-1	13-12
1SS119	13-12
1SS133	13-12
1SS148	13-12
BR5104S	13-12
ERB12-??	13-12
GL-5HD5	13-12
GP-1L52	13-12
GP-1L53	13-12
RD??EB?	13-12
RD??ESB?	13-12
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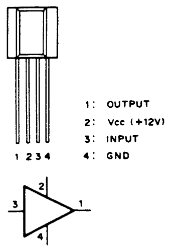
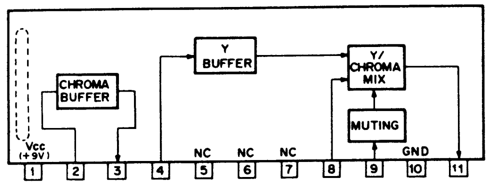
SPS102	13-12
TLY123	13-12
TLY255	13-12
TLUG154	13-12
TLUY154	13-12
U05E	13-12
U05G	13-12

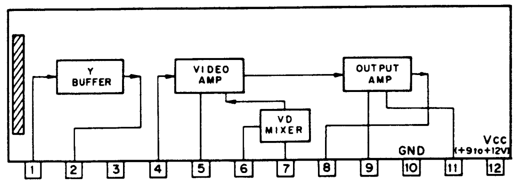
AN608P (MATSUSHITA)
WIDE BAND AMPLIFIER
— PRINTED SIDE VIEW —


1: OUTPUT
2: Vcc (+12V)
3: INPUT
4: GND
1 2 3 4
1
2
3
4

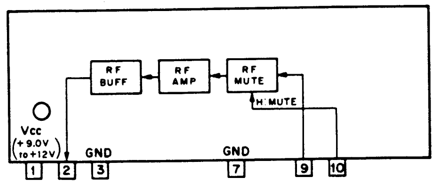
BX373AL (ROHM)
MIX AMP
— REAR VIEW —


Y BUFFER
Y/ CHROMA MIX
CHROMA BUFFER
MUTING
Vcc (+9V)
NC
NC
NC
GND
1
2
3
4
5
6
7
8
9
10
11

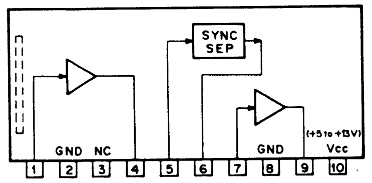
BX388 (SONY)
BX388L (ROHM)
VIDEO AMP/VD MIXER
— PRINTED SIDE —


Y BUFFER
VIDEO AMP
OUTPUT AMP
VD MIXER
GND
Vcc (+9 to +12V)
1
2
3
4
5
6
7
8
9
10
11
12

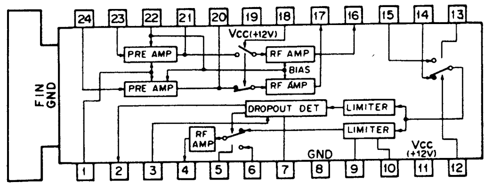
BX1265L (ROHM)
VIDEO HEAD AMPLIFIER/MUTING
— PRINTED SIDE VIEW —


RF BUFF
RF AMP
RF MUTE
H: MUTE
Vcc (+9.0V to +12V)
GND
GND
1
2
3
7
9
10

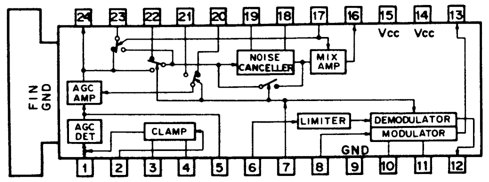
BX3915A (SONY)
SYNC SEPARATOR
— PRINTED SIDE —


SYNC SEP
GND
NC
GND
(+5 to +13V) Vcc
1
2
3
4
5
6
7
8
9
10

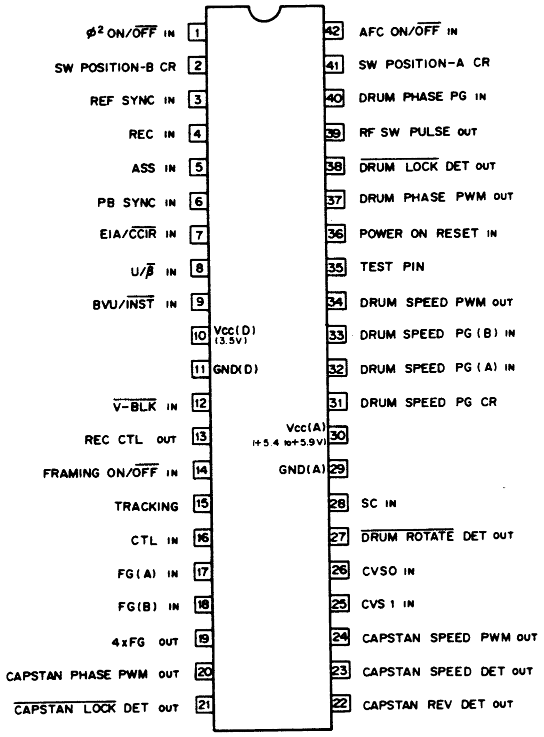
CX134A (SONY)
HEAD AMP/DROPOUT COMPENSATOR
— TOP VIEW —


FIN GND
PRE AMP
PRE AMP
Vcc(+12V)
RF AMP
BIAS
RF AMP
DROPOUT DET
LIMITER
LIMITER
RF AMP
GND
Vcc (+12V)
24
23
22
21
20
19
18
17
16
15
14
13
1
2
3
4
5
6
7
8
9
10
11
12

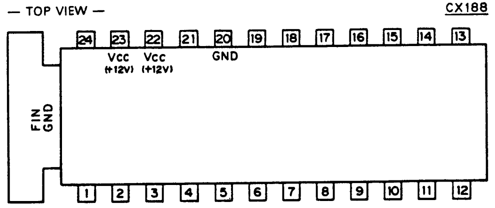
CX187 (SONY)
LUMINANCE SIGNAL PROCESSER
-TOP VIEW-

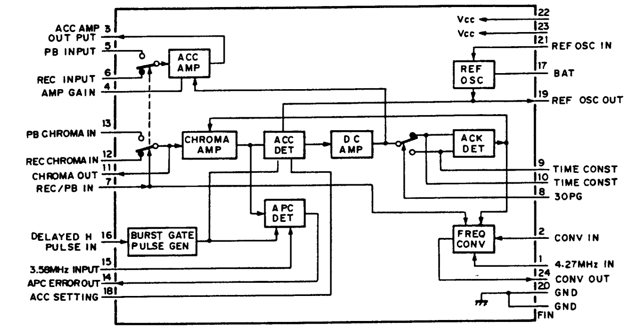

FIN GND
AGC AMP
AGC DET
CLAMP
NOISE CANCELLER
MIX AMP
Vcc
Vcc
LIMITER
DEMODULATOR
MODULATOR
GND
24
23
22
21
20
19
18
17
16
15
14
13
1
2
3
4
5
6
7
8
9
10
11
12

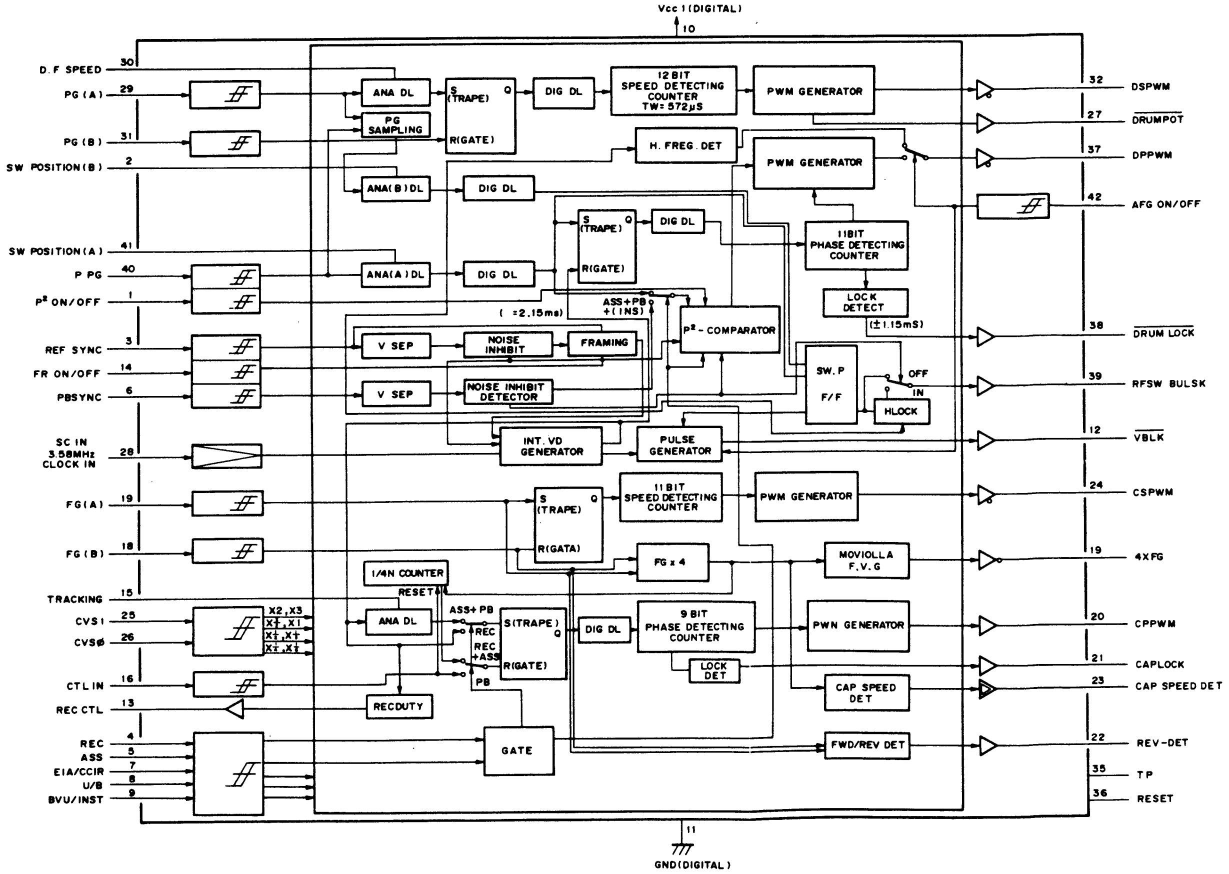
CX194B (SONY)
DRUM/CAPSTAN PWM SERVO
— TOP VIEW —


ϕ² ON/OFF IN 1
SW POSITION-B CR 2
REF SYNC IN 3
REC IN 4
ASS IN 5
PB SYNC IN 6
EIA/CCIR IN 7
U/β IN 8
BVU/INST IN 9
10 Vcc(D) (3.5V)
11 GND(D)
V-BLK IN 12
REC CTL OUT 13
FRAMING ON/OFF IN 14
TRACKING 15
CTL IN 16
FG(A) IN 17
FG(B) IN 18
4xFG OUT 19
CAPSTAN PHASE PWM OUT 20
CAPSTAN LOCK DET OUT 21
42 AFC ON/OFF IN
41 SW POSITION-A CR
40 DRUM PHASE PG IN
39 RF SW PULSE OUT
38 DRUM LOCK DET OUT
37 DRUM PHASE PWM OUT
36 POWER ON RESET IN
35 TEST PIN
34 DRUM SPEED PWM OUT
33 DRUM SPEED PG (B) IN
32 DRUM SPEED PG (A) IN
31 DRUM SPEED PG CR
Vcc(A) (+5.4 to +5.9V) 30
GND(A) 29
28 SC IN
27 DRUM ROTATE DET OUT
26 CVSO IN
25 CVS 1 IN
24 CAPSTAN SPEED PWM OUT
23 CAPSTAN SPEED DET OUT
22 CAPSTAN REV DET OUT

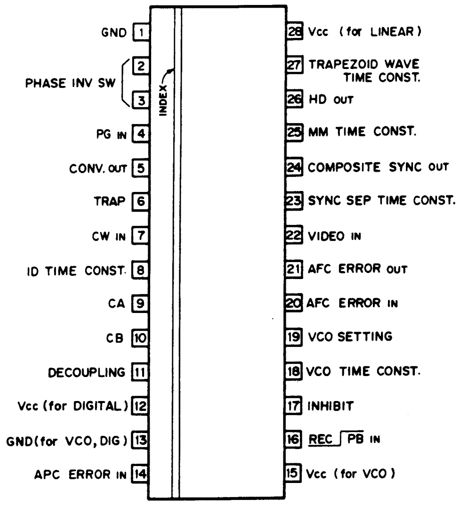
CX188
CHROMINANCE SIGNAL PROCESSER
— TOP VIEW —

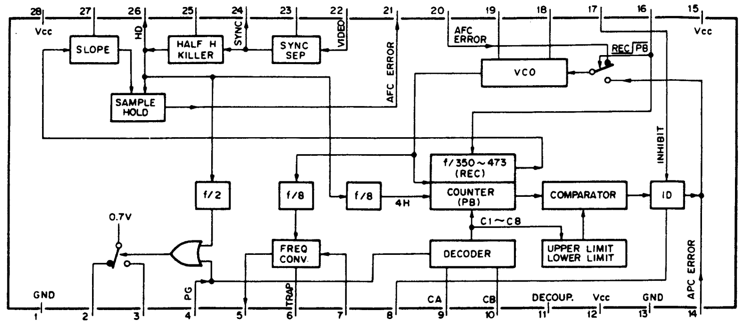

CX188
FIN GND
Vcc (+12V)
Vcc (+12V)
GND
24
23
22
21
20
19
18
17
16
15
14
13
1
2
3
4
5
6
7
8
9
10
11
12


ACC AMP OUT PUT 3
PB INPUT 5
REC INPUT 6
AMP GAIN 4
PB CHROMA IN 13
REC CHROMA IN 12
CHROMA OUT 11
REC/PB IN 7
DELAYED H PULSE IN 16
3.58MHz INPUT 15
APC ERROR OUT 14
ACC SETTING 18
ACC AMP
CHROMA AMP
ACC DET
DC AMP
ACK DET
APC DET
BURST GATE PULSE GEN
REF OSC
FREQ CONV
Vcc 22
Vcc 23
21 REF OSC IN
17 BAT
19 REF OSC OUT
9 TIME CONST
10 TIME CONST
8 30PG
2 CONV IN
1 4.27MHz IN
24 CONV OUT
20 GND
GND
FIN


Vcc 1 (DIGITAL)
10
D.F SPEED 30
PG (A) 29
PG (B) 31
SW POSITION (B) 2
SW POSITION (A) 41
P PG 40
P² ON/OFF 1
REF SYNC 3
FR ON/OFF 14
PBSYNC 6
SC IN 3.58MHz CLOCK IN 28
FG (A) 19
FG (B) 18
TRACKING 15
CVS1 25
CVSØ 26
CTL IN 16
REC CTL 13
REC 4
ASS 5
EIA/CCIR 7
U/B 8
BVU/INST 9
ANA DL
PG SAMPLING
S (TRAPE) Q
R(GATE)
DIG DL
12 BIT SPEED DETECTING COUNTER TW=572μS
PWM GENERATOR
H. FREQ. DET
PWM GENERATOR
ANA(B) DL
DIG DL
S (TRAPE) Q
R(GATE)
DIG DL
11BIT PHASE DETECTING COUNTER
LOCK DETECT
(±1.15mS)
ANA(A) DL
DIG DL
ASS+PB +(INS)
(=2.15ms)
P² - COMPARATOR
V SEP
NOISE INHIBIT
FRAMING
V SEP
NOISE INHIBIT DETECTOR
SW. P F/F
OFF
IN
HLOCK
INT. VD GENERATOR
PULSE GENERATOR
S (TRAPE) Q
R(GATA)
11 BIT SPEED DETECTING COUNTER
PWM GENERATOR
FG x 4
MOVIOLLA F.V.G
1/4N COUNTER
RESET
X2, X3
X½, X1
X¼, X½
X⅛, X¼
ANA DL
ASS+PB
REC
REC +ASS
PB
S(TRAPE) Q
R(GATE)
DIG DL
9 BIT PHASE DETECTING COUNTER
LOCK DET
PWN GENERATOR
CAP SPEED DET
RECDUTY
GATE
FWD/REV DET
32 DSPWM
27 DRUMPOT
37 DPPWM
42 AFG ON/OFF
38 DRUM LOCK
39 RFSW BULSK
12 VBLK
24 CSPWM
19 4XFG
20 CPPWM
21 CAPLOCK
23 CAP SPEED DET
22 REV-DET
35 TP
36 RESET
11
GND (DIGITAL)

CX859 (SONY)
— TOP VIEW —


GND 1
PHASE INV SW 2 3
PG IN 4
CONV. OUT 5
TRAP 6
CW IN 7
ID TIME CONST. 8
CA 9
CB 10
DECOUPLING 11
Vcc (for DIGITAL) 12
GND (for VCO, DIG) 13
APC ERROR IN 14
INDEX
28 Vcc (for LINEAR)
27 TRAPEZOID WAVE TIME CONST.
26 HD OUT
25 MM TIME CONST.
24 COMPOSITE SYNC OUT
23 SYNC SEP TIME CONST.
22 VIDEO IN
21 AFC ERROR OUT
20 AFC ERROR IN
19 VCO SETTING
18 VCO TIME CONST.
17 INHIBIT
16 REC / PB IN
15 Vcc (for VCO)


Vcc
SLOPE
HALF H KILLER
SYNC SEP
VIDEO
AFC ERROR
VCO
REC PB
Vcc
SAMPLE HOLD
INHIBIT
f/350~473 (REC)
COUNTER (PB)
COMPARATOR
10
f/2
f/8
f/8
4H
C1~C8
0.7V
FREQ CONV.
DECODER
UPPER LIMIT LOWER LIMIT
APC ERROR
GND
PG
TRAP
CA
CB
DECOUP.
Vcc
GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14
28 27 26 25 24 23 22 21 20 19 18 17 16 15

DECODER TRUTH TABLE

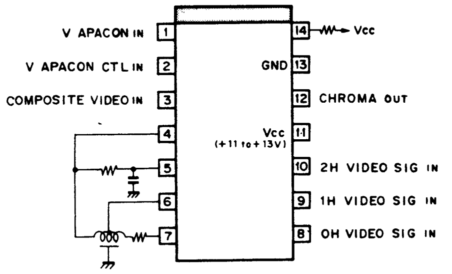
CB / CA	LOW	OPEN	HIGH
LOW	C1	C7	—
OPEN	C4	C5	C6
HIGH	—	*C2 C3	C8

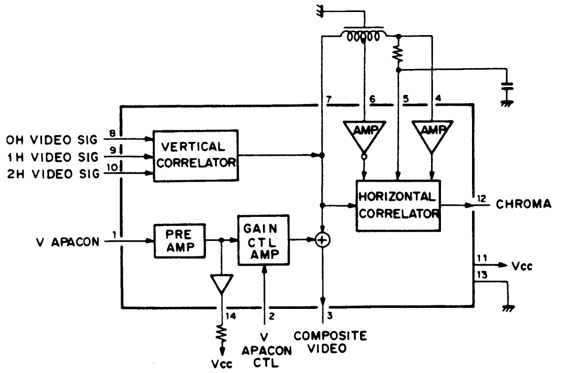
* PG : L--- C2
PG : H--- C3

AFC/ APC PRESET DATA

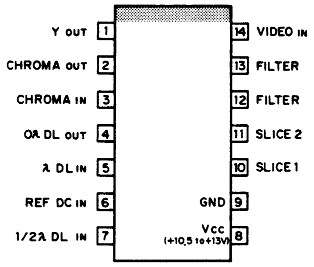
	AFC COUNT DOWN	APC ID COUNT	
		UPPER LIM.	LOWER LIM.
C1	f / 473	105	95
C2	f / 351	129	119
C3	f / 353	137	127
C4	f / 351	118	104
C5	f / 351	131	117
C6	f / 351	144	130
C7	f / 350	136	104
C8	——	125	115

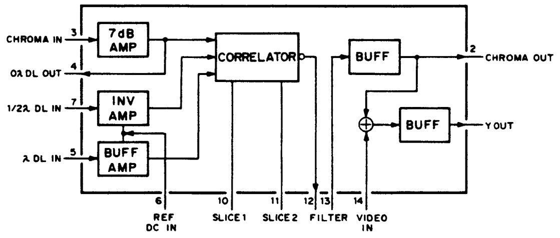
CX22013 (SONY)
DYNAMIC COMB FILTER
— TOP VIEW —


V APACON IN 1
V APACON CTL IN 2
COMPOSITE VIDEO IN 3
4
5
6
7
14 Vcc
GND 13
12 CHROMA OUT
Vcc (+11 to +13V) 11
10 2H VIDEO SIG IN
9 1H VIDEO SIG IN
8 0H VIDEO SIG IN

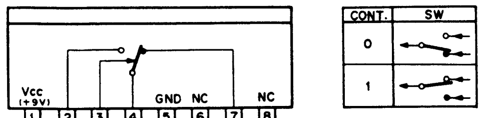

0H VIDEO SIG 8
1H VIDEO SIG 9
2H VIDEO SIG 10
VERTICAL CORRELATOR
7 6 5 4
AMP
AMP
HORIZONTAL CORRELATOR
12 CHROMA
V APACON 1
PRE AMP
GAIN CTL AMP
11 Vcc
13
14 2 3
Vcc
V APACON CTL
COMPOSITE VIDEO

CXA1020P (SONY)
CHROMA CROSS-COLOR NOISE REDUCER/EDGE COMPENSATOR
— TOP VIEW —


Y OUT 1
CHROMA OUT 2
CHROMA IN 3
0λ DL OUT 4
λ DL IN 5
REF DC IN 6
1/2λ DL IN 7
14 VIDEO IN
13 FILTER
12 FILTER
11 SLICE 2
10 SLICE 1
GND 9
Vcc (+10.5 to +13V) 8

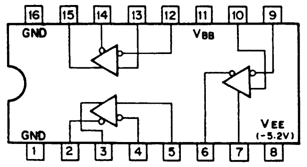

CHROMA IN 3
0λ DL OUT 4
1/2λ DL IN 7
λ DL IN 5
7dB AMP
INV AMP
BUFF AMP
CORRELATOR
BUFF
BUFF
2 CHROMA OUT
1 Y OUT
6 10 11 12 13 14
REF DC IN
SLICE 1
SLICE 2
FILTER
VIDEO IN

CX20061 (SONY)
ANALOG SWITCH
— SIDE VIEW —

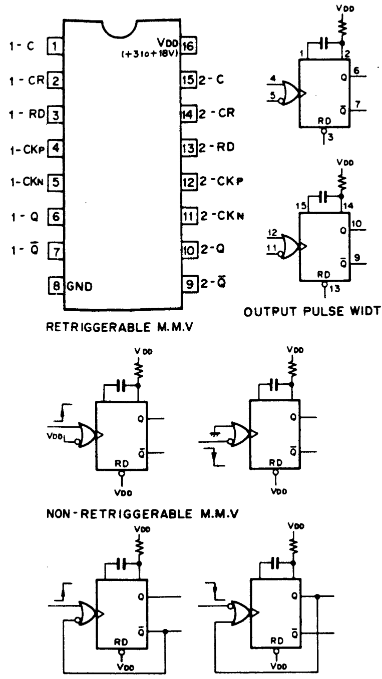

Vcc (+9V)
GND NC
NC
1 2 3 4 5 6 7 8
IN2 CONT. OUT
IN1
CONT.
SW
0
1

0 ; LOW LEVEL
1 ; HIGH LEVEL

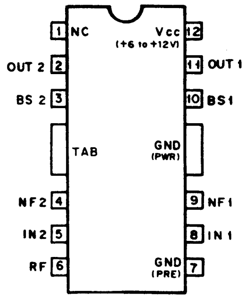
HD10116 (HITACHI)
ECL DIFFERENTIAL OR/NOR LINE RECEIVER
— TOP VIEW —


16 15 14 13 12 11 10 9
GND
VBB
GND
VEE (-5.2V)
1 2 3 4 5 6 7 8

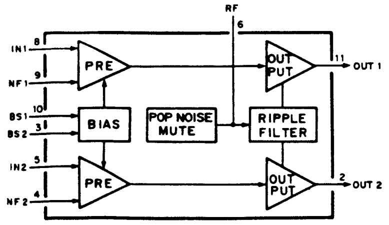
HD14538BP (HITACHI)
TC4538BP (TOSHIBA)
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
— TOP VIEW —


1-C 1
1-CR 2
1-RD 3
1-CKP 4
1-CKN 5
1-Q 6
1-Q̄ 7
8 GND
VDD (+3 to +18V) 16
15 2-C
14 2-CR
13 2-RD
12 2-CKP
11 2-CKN
10 2-Q
9 2-Q̄
VDD
RD
Q
Q̄
RETRIGGERABLE M.M.V
OUTPUT PULSE WIDTH=CR
NON-RETRIGGERABLE M.M.V

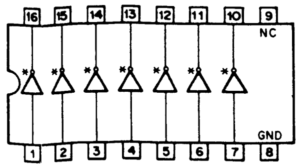
LA4550 (SANYO)
2CH AF POWER AMP
— TOP VIEW —


1 NC
OUT 2 2
BS 2 3
TAB
NF2 4
IN2 5
RF 6
Vcc (+6 to +12V) 12
11 OUT 1
10 BS1
GND (PWR)
9 NF1
8 IN1
GND (PRE) 7

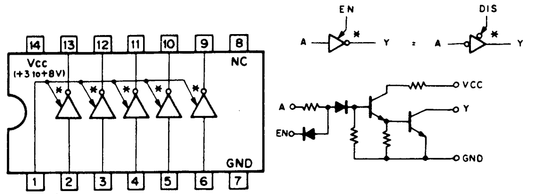
BS1,BS2 ; BOOTSTRAP CAPACITOR
IN1, IN2 ; INPUTS
NF1, NF2 ; NEGATIVE FEEDBACK CONTROL
OUT1,OUT2 ; OUTPUTS
RF ; RIPPLE FILTER


RF 6
IN1 8
NF1 9
BS1 10
BS2 3
IN2 5
NF2 4
PRE
BIAS
POP NOISE MUTE
RIPPLE FILTER
PRE
OUT PUT
OUT PUT
11 OUT 1
2 OUT 2

M54517P (MITSUBISHI)
INVERTER WITH OPEN-COLLECTOR
(DARLINGTON-CONNECTED TRANSISTOR ARRAY)
— TOP VIEW —


16 15 14 13 12 11 10 9
NC
GND
1 2 3 4 5 6 7 8

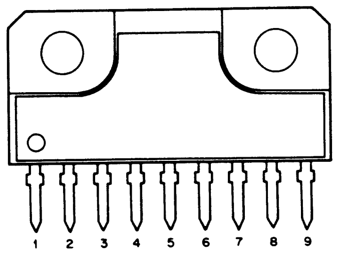
M54529AP (MITSUBISHI)
TRANSISTOR ARRAY
— TOP VIEW —

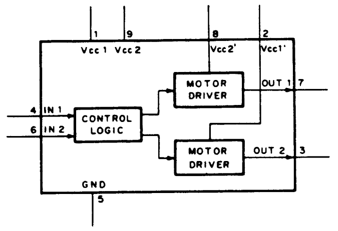

14 13 12 11 10 9 8
Vcc (+3 to +8V)
NC
GND
1 2 3 4 5 6 7
ENABLE
EN
DIS
A
Y
A
Y
VCC
Y
A
EN
GND

A	EN	Y
0	1	1
1	1	0
X	0	1

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
* ; OPEN COLLECTOR

M54543L (MITSUBISHI)
BI-DIRECTIONAL MOTOR DRIVER
— SIDE VIEW —

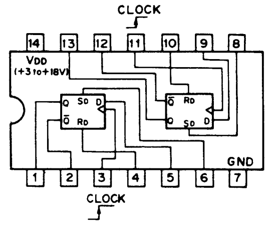



1 9 8 2
Vcc1 Vcc2
Vcc2'
Vcc1'
MOTOR DRIVER
OUT 1 7
4 IN 1
6 IN 2
CONTROL LOGIC
MOTOR DRIVER
OUT 2 3
GND
5

IN 1	IN 2	OUT 1	OUT 2	MODE
0	0	Z	Z	NO. OPERATION
1	0	1	0	ROTATION
0	1	0	1	REVERSE ROTATION
1	1	0	0	BRAKE

0 : LOW LEVEL
1 : HIGH LEVEL
Z : HIGH IMPEDANCE

MB84013B (FUJITSU)
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
— TOP VIEW —


CLOCK
14 13 12 11 10 9 8
VDD (+3 to +18V)
SD Q
RD
RD
SD
GND
1 2 3 4 5 6 7
CLOCK

DIRECT R-S FLIP FLOP

SD	RD	Q	Q̄
0	0	Qn	Q̄n
0	1	0	1
1	0	1	0
1	1	0	1

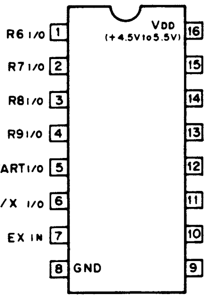
D-TYPE FLIP FLOP

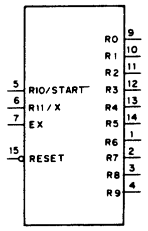
CKn	CKn+1
D	Q
0	0
1	1

CLOCK CK ; ⎍
CKn ; BEFORE CLOCK
CKn +1 ; AFTER CLOCK

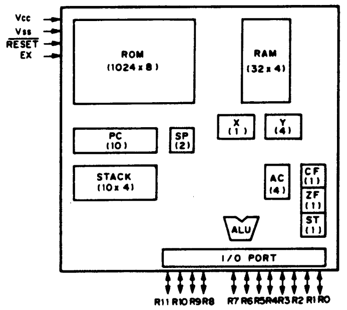
0 ; LOW LEVEL
1 ; HIGH LEVEL

MB88201-173N (FUJITSU)
C-MOS 4 BIT MICROCOMPUTER
— TOP VIEW —

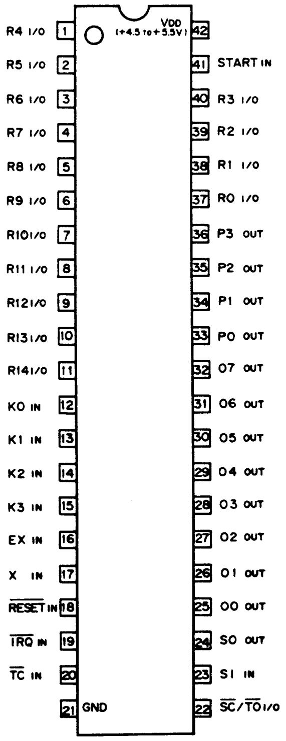

VDD (+4.5V to 5.5V) 16
R6 I/O 1
R7 I/O 2
R8 I/O 3
R9 I/O 4
R10/START I/O 5
R11/X I/O 6
EX IN 7
8 GND
15 RESET IN
14 R5 I/O
13 R4 I/O
12 R3 I/O
11 R2 I/O
10 R1 I/O
9 R0 I/O

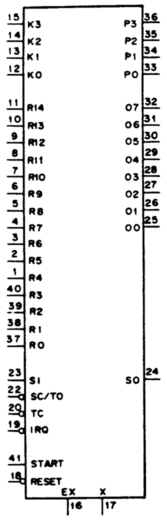

5 R10/START
6 R11/X
7 EX
15 RESET
R0 9
R1 10
R2 11
R3 12
R4 13
R5 14
R6 1
R7 2
R8 3
R9 4

EX ; EXTERNAL X'TAL IN
R0-R11 ; I/O PORT(R) IN/OUT
$\overline{\text{RESET}}$; RESET IN
START ; STANDBY RELEASE IN
R11/X ; EXT CLOCK IN/INT CLOCK OUT

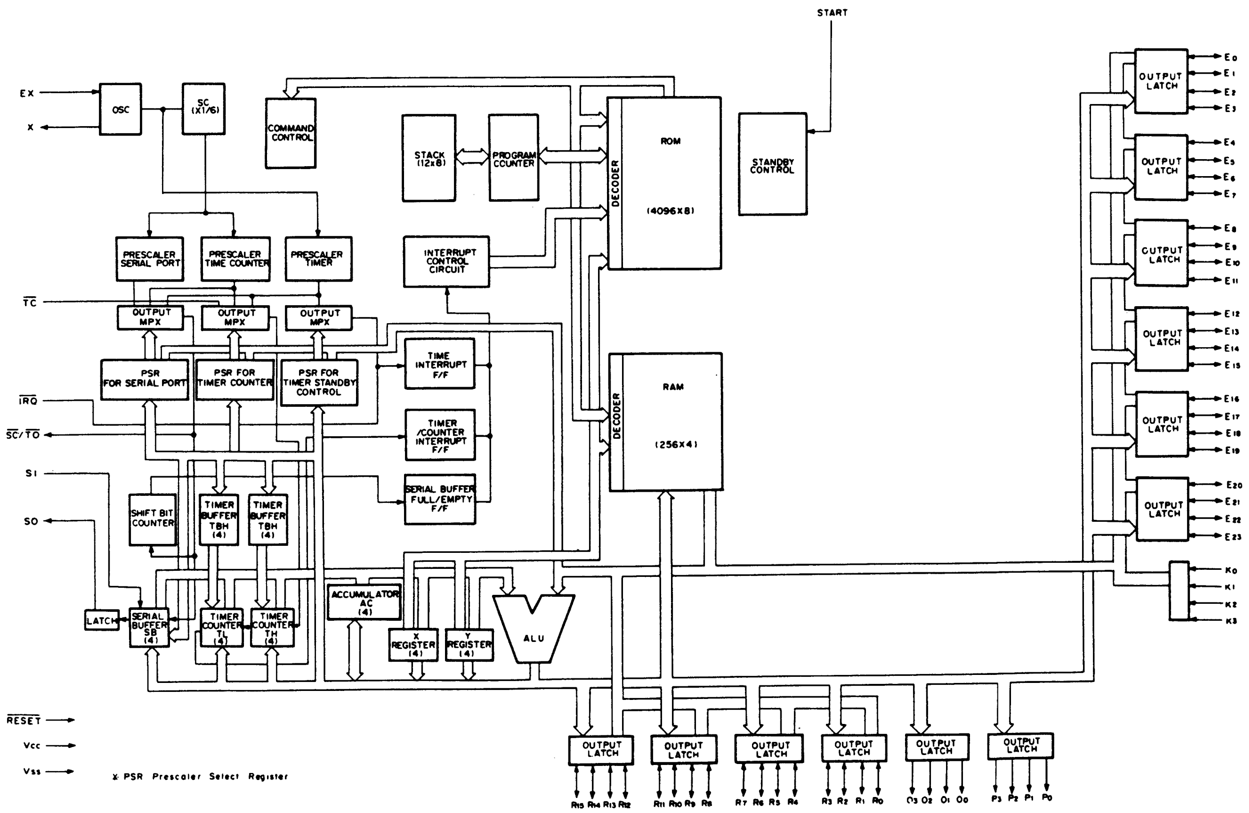

Vcc
Vss
RESET
EX
ROM (1024×8)
RAM (32×4)
PC (10)
SP (2)
X (1)
Y (4)
STACK (10×4)
AC (4)
CF (1)
ZF (1)
ST (1)
ALU
I/O PORT
R11 R10 R9 R8 R7 R6 R5 R4 R3 R2 R1 R0

MB88505P (FUJITSU)
C-MOS 4-BIT ONE-CHIP MICROCOMPUTER
— TOP VIEW —


VDD (+4.5 to +5.5V) 42
R4 I/O 1
R5 I/O 2
R6 I/O 3
R7 I/O 4
R8 I/O 5
R9 I/O 6
R10 I/O 7
R11 I/O 8
R12 I/O 9
R13 I/O 10
R14 I/O 11
K0 IN 12
K1 IN 13
K2 IN 14
K3 IN 15
EX IN 16
X IN 17
RESET IN 18
IRQ IN 19
TC IN 20
21 GND
41 START IN
40 R3 I/O
39 R2 I/O
38 R1 I/O
37 R0 I/O
36 P3 OUT
35 P2 OUT
34 P1 OUT
33 P0 OUT
32 O7 OUT
31 O6 OUT
30 O5 OUT
29 O4 OUT
28 O3 OUT
27 O2 OUT
26 O1 OUT
25 O0 OUT
24 SO OUT
23 SI IN
22 SC/TO I/O

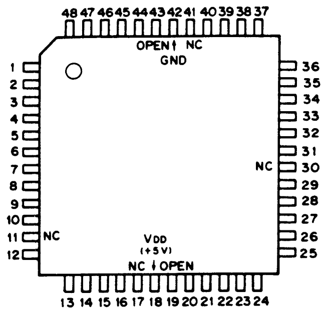

15 K3
14 K2
13 K1
12 K0
11 R14
10 R13
9 R12
8 R11
7 R10
6 R9
5 R8
4 R7
3 R6
2 R5
1 R4
40 R3
39 R2
38 R1
37 R0
23 SI
22 SC/TO
20 TC
19 IRQ
41 START
18 RESET
EX 16
X 17
P3 36
P2 35
P1 34
P0 33
O7 32
O6 31
O5 30
O4 29
O3 28
O2 27
O1 26
O0 25
SO 24

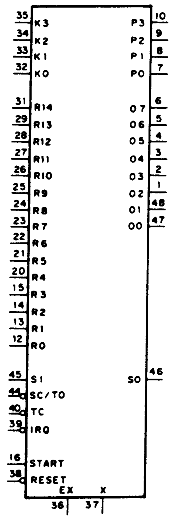
EX ; EXTERNAL CLOCK IN
$\overline{\text{IRQ}}$; INTERRUPT REQUEST IN
K0-K3 ; 4-BIT PARALLEL IN
O0-O7 ; 4-BIT PARALLEL OUT
P0-P3 ; 4-BIT PARALLEL OUT
R0-R14 ; DATA IN/OUT
$\overline{\text{RESET}}$; RESET IN
$\overline{\text{SC}}/\overline{\text{TO}}$; SHIFT CLOCK IN/INT TIMING OUT
SI ; SERIAL DATA IN
SO ; SERIAL DATA OUT
START ; STANDBY OFF IN
$\overline{\text{TC}}$; EXTERNAL CLOCK IN FOR COUNTER
X ; CLOCK OUT


START
EX
X
OSC
SC (1/6)
COMMAND CONTROL
STACK (12×8)
PROGRAM COUNTER
DECODER
ROM (4096×8)
STANDBY CONTROL
PRESCALER SERIAL PORT
PRESCALER TIME COUNTER
PRESCALER TIMER
INTERRUPT CONTROL CIRCUIT
TC
OUTPUT MPX
PSR FOR SERIAL PORT
PSR FOR TIMER COUNTER
PSR FOR TIMER STANDBY CONTROL
TIME INTERRUPT F/F
IRQ
TIMER /COUNTER INTERRUPT F/F
SC/TO
RAM (256×4)
SI
SO
SHIFT BIT COUNTER
TIMER BUFFER TBH (4)
TIMER BUFFER TBH (4)
SERIAL BUFFER FULL/EMPTY F/F
LATCH
SERIAL BUFFER SB (4)
TIMER COUNTER TL (4)
TIMER COUNTER TH (4)
ACCUMULATOR AC (4)
X REGISTER (4)
Y REGISTER (4)
ALU
OUTPUT LATCH
E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11 E12 E13 E14 E15 E16 E17 E18 E19 E20 E21 E22 E23
K0 K1 K2 K3
RESET
Vcc
Vss
R15 R14 R13 R12 R11 R10 R9 R8 R7 R6 R5 R4 R3 R2 R1 R0 O3 O2 O1 O0 P3 P2 P1 P0

* PSR Prescaler Select Register

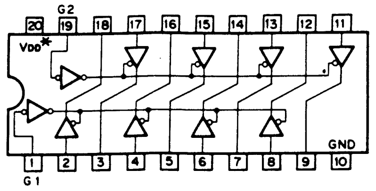
MB88505PF (FUJITSU) FLAT PACKAGE
C-MOS 4-BIT ONE-CHIP MICROCOMPUTER
— TOP VIEW —

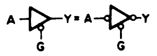

48 47 46 45 44 43 42 41 40 39 38 37
OPEN NC
GND
1 2 3 4 5 6 7 8 9 10 11 12
NC
36 35 34 33 32 31 30 29 28 27 26 25
VDD (+5V)
NC OPEN
13 14 15 16 17 18 19 20 21 22 23 24


35 K3
34 K2
33 K1
32 K0
31 R14
29 R13
28 R12
27 R11
26 R10
25 R9
24 R8
23 R7
22 R6
21 R5
20 R4
15 R3
14 R2
13 R1
12 R0
45 SI
44 SC/TO
40 TC
39 IRQ
16 START
38 RESET
EX 36
X 37
P3 10
P2 9
P1 8
P0 7
O7 6
O6 5
O5 4
O4 3
O3 2
O2 1
O1 48
O0 47
SO 46

EX ; EXTERNAL CLOCK IN
$\overline{\text{IRQ}}$; INTERRUPT REQUEST IN
K0-K3 ; 4-BIT PARALLEL IN
O0-O7 ; 4-BIT PARALLEL OUT
P0-P3 ; 4-BIT PARALLEL OUT
R0-R14 ; DATA IN/OUT
$\overline{\text{RESET}}$, RESET IN
$\overline{\text{SC}}/\overline{\text{TO}}$; SHIFT CLOCK IN/INT TIMING OUT
SI ; SERIAL DATA IN
SO ; SERIAL DATA OUT
START ; STANDBY OFF IN
$\overline{\text{TC}}$; EXTERNAL CLOCK IN FOR COUNTER
X ; CLOCK OUT

MC74HC244N (MOTOROLA)
SN74HC244N (TI)
TC74HC244P (TOSHIBA)
C-MOS BUS BUFFER WITH 3-STATE OUTPUT
— TOP VIEW —

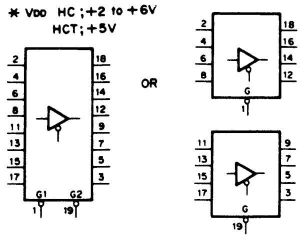

G2
20 19 18 17 16 15 14 13 12 11
VDD*
GND
1 2 3 4 5 6 7 8 9 10
G1



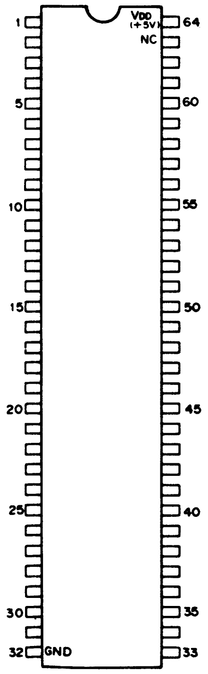
G	A	Y
0	0	0
0	1	1
1	X	HI-Z

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE

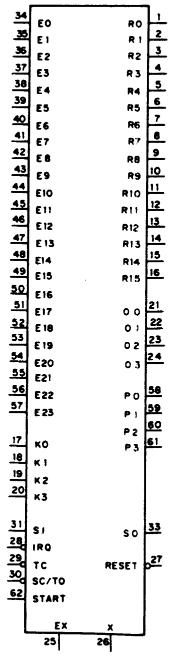
* VDD HC ; +2 to +6V
HCT; +5V


2 4 6 8 11 13 15 17
18 16 14 12 9 7 5 3
G1 G2
1 19
OR
2 4 6 8
18 16 14 12
G
1
11 13 15 17
9 7 5 3
G
19

MB88525P (FUJITSU)
C-MOS 4-BIT ONE-CHIP MICROCOMPUTER
— TOP VIEW —

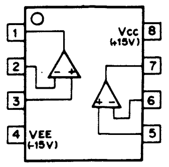

1
5
10
15
20
25
30
32 GND
VDD (+5V) 64
NC
60
55
50
45
40
35
33

PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1	○	○	R0	33		○	SO
2	○	○	R1	34	○	○	E0
3	○	○	R2	35	○	○	E1
4	○	○	R3	36	○	○	E2
5	○	○	R4	37	○	○	E3
6	○	○	R5	38	○	○	E4
7	○	○	R6	39	○	○	E5
8	○	○	R7	40	○	○	E6
9	○	○	R8	41	○	○	E7
10	○	○	R9	42	○	○	E8
11	○	○	R10	43	○	○	E9
12	○	○	R11	44	○	○	E10
13	○	○	R12	45	○	○	E11
14	○	○	R13	46	○	○	E12
15	○	○	R14	47	○	○	E13
16	○	○	R15	48	○	○	E14
17	○		K0	49	○	○	E15
18	○		K1	50	○	○	E16
19	○		K2	51	○	○	E17
20	○		K3	52	○	○	E18
21		○	O0	53	○	○	E19
22		○	O1	54	○	○	E20
23		○	O2	55	○	○	E21
24		○	O3	56	○	○	E22
25	○		EX	57	○	○	E23
26		○	X	58		○	P0
27	○	○	$\overline{\text{RESET}}$	59		○	P1
28	○		$\overline{\text{IRQ}}$	60		○	P2
29	○		$\overline{\text{TC}}$	61		○	P3
30	○	○	$\overline{\text{SC}}/\overline{\text{TO}}$	62	○		START
31	○		SI	63	—	—	———
32			GND	64			VDD

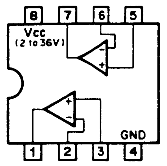

34 E0
35 E1
36 E2
37 E3
38 E4
39 E5
40 E6
41 E7
42 E8
43 E9
44 E10
45 E11
46 E12
47 E13
48 E14
49 E15
50 E16
51 E17
52 E18
53 E19
54 E20
55 E21
56 E22
57 E23
17 K0
18 K1
19 K2
20 K3
31 SI
28 IRQ
29 TC
30 SC/TO
62 START
EX 25
X 26
R0 1
R1 2
R2 3
R3 4
R4 5
R5 6
R6 7
R7 8
R8 9
R9 10
R10 11
R11 12
R12 13
R13 14
R14 15
R15 16
O0 21
O1 22
O2 23
O3 24
P0 58
P1 59
P2 60
P3 61
SO 33
RESET 27

E0-E23 ; I/O PORT (E) IN/OUT
EX ; EXTERNAL CLOCK IN
$\overline{\text{IRQ}}$; EXTERNAL INTERRUPT REQUEST IN
K0-K3 ; INPUT PORT(K) IN
O0-O3 ; OUTPUT PORT(O) OUT
P0-P3 ; OUTPUT PORT(P) OUT
R0-R15 ; I/O PORT (R) IN/OUT
$\overline{\text{RESET}}$; RESET IN
$\overline{\text{SC}}/\overline{\text{TO}}$; SHIFT CLOCK IN/TIMING OUT
SI ; SERIAL DATA IN
START ; STANDBY RELEASE IN
SO ; SERAL DATA OUT
$\overline{\text{TC}}$; EXTERNAL CLOCK IN
X ; CLOCK OUT

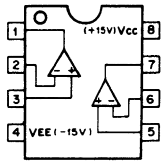
NJM2043D-D (JRC)
OPERATIONAL AMPLIFIER
— TOP VIEW —


Vcc (+15V)
VEE (-15V)
1
2
3
4
5
6
7
8

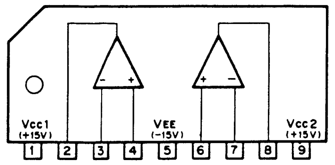
NJM2903D (JRC)
uPC393C (NEC)
VOLTAGE COMPARATOR
— TOP VIEW —


Vcc (2 to 36V)
GND
8 7 6 5
1 2 3 4

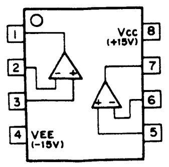
NJM4558D (JRC)
NJM4558D-D (JRC)
uPC4558C (NEC)
OPERATIONAL AMPLIFIER
— TOP VIEW —


(+15V)Vcc
VEE(-15V)
1
2
3
4
5
6
7
8

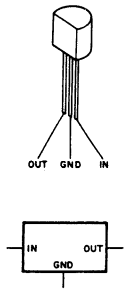
NJM4558S (JRC)
HIGH PERFORMANCE DUAL OPERATIONAL AMPLIFIER
— SIDE VIEW —


Vcc1 (+15V)
VEE (-15V)
Vcc2 (+15V)
1 2 3 4 5 6 7 8 9

NJM4562D-D (JRC)
OPERATIONAL AMPLIFIER
— TOP VIEW —

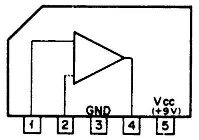

Vcc (+15V)
VEE (-15V)
1
2
3
4
5
6
7
8

NJM78L ? ?A (NEC)
POSITIVE VOLTAGE REGULATOR (100mA)

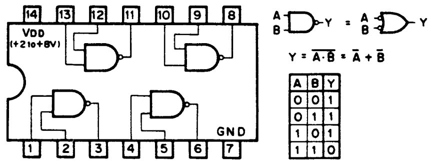

OUT
GND
IN
IN
OUT
GND

+5V NJM78L05A uA78L05ACL uA78L05AWV uPC78L05J AN78L05

TA7060AP (TOSHIBA)
LINEAR AMP
— SIDE VIEW —


GND
Vcc (+9V)
1 2 3 4 5

TC40H000P (TOSHIBA)
C-MOS 2-INPUT NAND GATE
— TOP VIEW —

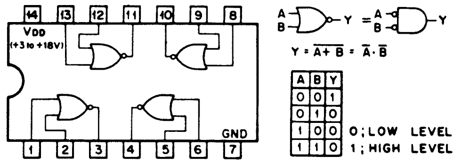

VDD (+2 to +8V)
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
A
B
Y
A
B
Y

$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

TC4001BP (TOSHIBA)
TC4001UBP (TOSHIBA)
C-MOS 2-INPUT NOR GATE
— TOP VIEW —

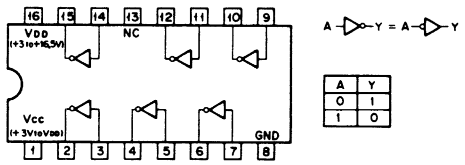

VDD (+3 to +18V)
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
A
B
Y
A
B
Y

$Y = \overline{A + B} = \overline{A} \cdot \overline{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

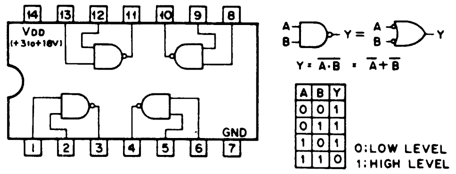
0; LOW LEVEL
1; HIGH LEVEL

TC4009UBP (TOSHIBA)
C-MOS INVERTING TYPE BUFFER/CONVERTER (TO TTL LEVEL)
— TOP VIEW —


VDD (+3 to +16.5V)
NC
Vcc (+3V to VDD)
GND
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
A
Y
A
Y

A	Y
0	1
1	0

TC4011BP (TOSHIBA)
C-MOS 2-INPUT NAND GATE
— TOP VIEW —

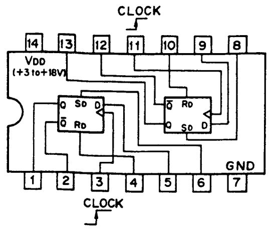

VDD (+3 to +18V)
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
A
B
Y
A
B
Y

$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0:LOW LEVEL
1:HIGH LEVEL

TC4013BP (TOSHIBA)
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
— TOP VIEW —


CLOCK
VDD (+3 to +18V)
SD
RD
Q
Q̄
D
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
CLOCK

DIRECT R-S FLIP FLOP

SD	RD	Q	$\overline{Q}$
0	0	Qn	$\overline{Qn}$
0	1	0	1
1	0	1	0
1	1	0	1

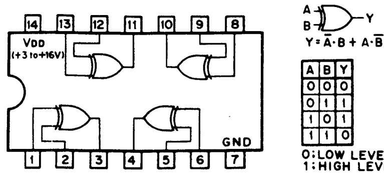
D-TYPE FLIP FLOP

CKn	CKn+1
D	Q
0	0
1	1

CLOCK CK; ↑
CKn; BEFORE CLOCK
CKn+1; AFTER CLOCK

0; LOW LEVEL
1; HIGH LEVEL

TC4030BPHB (TOSHIBA)
uPD4030BC (NEC)
C-MOS EXCLUSIVE OR GATE
— TOP VIEW —

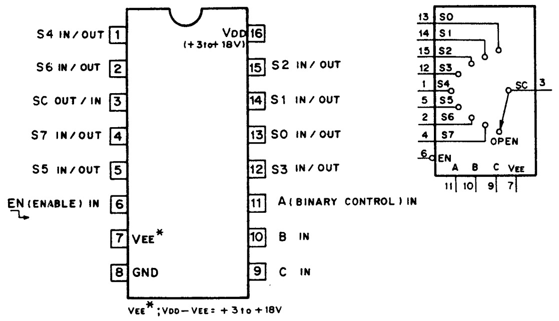

VDD (+3 to +16V)
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
A
B
Y

$Y = \overline{A} \cdot B + A \cdot \overline{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0:LOW LEVEL
1:HIGH LEVEL

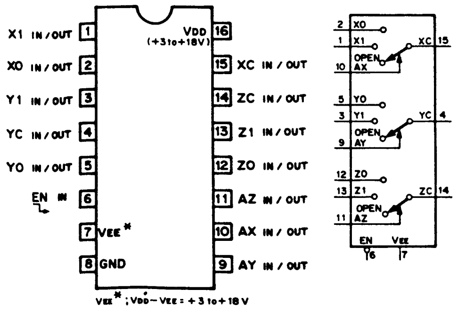
TC4051BP (TOSHIBA)
C-MOS 8-CHANNEL MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —


S4 IN/OUT 1
S6 IN/OUT 2
SC OUT/IN 3
S7 IN/OUT 4
S5 IN/OUT 5
EN (ENABLE) IN 6
7 VEE*
8 GND
VDD 16 (+3 to +18V)
15 S2 IN/OUT
14 S1 IN/OUT
13 S0 IN/OUT
12 S3 IN/OUT
11 A (BINARY CONTROL) IN
10 B IN
9 C IN
VEE*; VDD−VEE: +3 to +18V
13 S0
14 S1
15 S2
12 S3
1 S4
5 S5
2 S6
4 S7
6 EN
SC 3
OPEN
A B C VEE
11 10 9 7

EN	C	B	A	"ON" CHANNEL
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	X	X	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

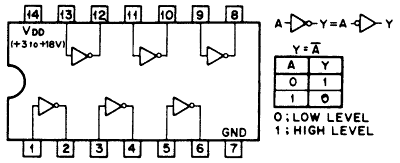
TC4053BP (TOSHIBA)
TC4053BPHB (TOSHIBA)
uPD4053BC (NEC)
C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD 16 (+3 to +18V)
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT
VEE*; VDD−VEE: +3 to +18V
2 X0
1 X1
10 AX
OPEN
XC 15
5 Y0
3 Y1
9 AY
OPEN
YC 4
12 Z0
13 Z1
11 AZ
OPEN
ZC 14
EN VEE
6 7

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

TC4069UBF (TOSHIBA) FLAT PACKAGE
TC4069UBP (TOSHIBA)
C-MOS INVERTER
— TOP VIEW —

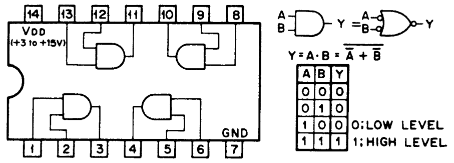

VDD (+3 to +18V)
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
A
Y
A
Y

$Y = \overline{A}$

A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

TC4081BP (TOSHIBA)
C-MOS 2-INPUT AND GATE
— TOP VIEW —

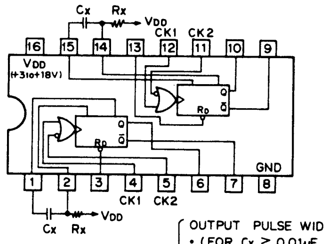

VDD (+3 to +15V)
GND
14 13 12 11 10 9 8
1 2 3 4 5 6 7
A
B
Y
A
B
Y

$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0:LOW LEVEL
1:HIGH LEVEL

TC4528BP (TOSHIBA)
C-MOS RETRIGGERABLE/RESETTABLE MMV
— TOP VIEW —

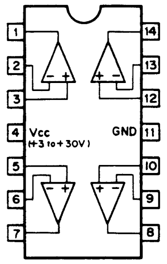

Cx
Rx
VDD
CK1
CK2
VDD (+3 to +18V)
Q
Q̄
RD
GND
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
CK1
CK2
VDD
Cx
Rx

INPUTS			OUTPUTS	
CK1	CK2	RD	Q	$\overline{Q}$
↑	1	1	⊓	⊔
↑	0	1	Q	$\overline{Q}$
1	↓	1	Q	$\overline{Q}$
0	↓	1	⊓	⊔
X	X	0	0	1

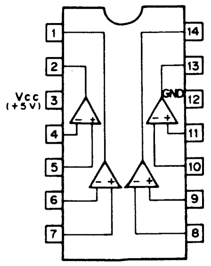
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

OUTPUT PULSE WIDTH Q OR $\overline{Q}$
- (FOR $C_x \geq 0.01\mu F$ USE FORMULA)
  $PW = 0.2 \cdot R_x \cdot C_x \cdot \ln (V_{DD} - GND)$
- (FOR $C_x < 0.01\mu F$ USE DATA BOOK.)

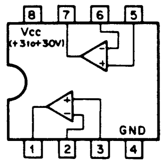
uPC324C (NEC)
QUAD. OP AMPLIFIER
— TOP VIEW —


Vcc (+3 to +30V)
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14

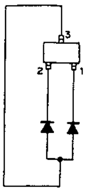
uPC339C (NEC)
COMPARATOR
— TOP VIEW —


Vcc (+5V)
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14

uPC358C (NEC)
DUAL OPERATIONAL AMPLIFIERS
— TOP VIEW —

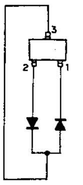

Vcc (+3 to +30V)
GND
8 7 6 5
1 2 3 4

TOP VIEW (SCALE 4/1)

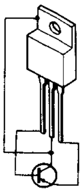


1S2835
1S2835-T1

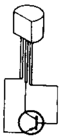
TOP VIEW (SCALE 4/1)



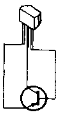
1SS123



2SA768
2SA771

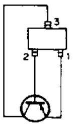


2SA933

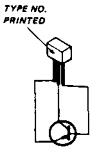


2SA1048
2SA1115

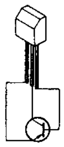
TOP VIEW (SCALE 4/1)



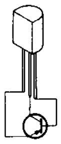
2SA1162
2SA1226


TYPE NO.
PRINTED

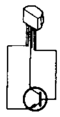
2SA1175
2SA1175F



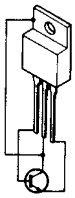
2SB733
2SB734



2SB739

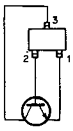


2SC1740S
2SC2458
2SC2603
2SC2603G
2SC403SP

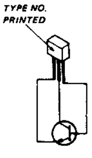


2SC1826

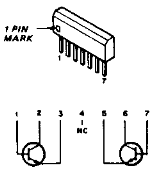
TOP VIEW (SCALE 4/1)



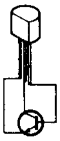
2SC2223
2SC2712


TYPE NO.
PRINTED

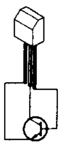
2SC2785E
2SC2785F
2SC2785K


1 PIN
MARK
1
7
1
2
3
4
NC
5
6
7

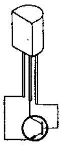
2SC2771



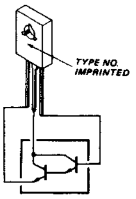
2SC2878



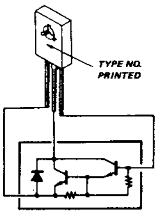
2SD773
2SD774



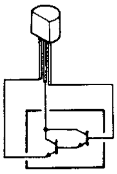
2SD788
2SD789


TYPE NO.
IMPRINTED

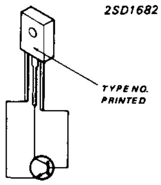
2SD894


TYPE NO.
PRINTED

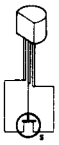
2SD998



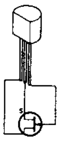
2SD1111


TYPE NO.
PRINTED

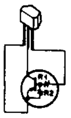
2SD1682



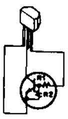
2SK105A



2SK523

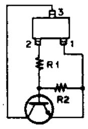


DTA124XS (R1=22K, R2=47K)
DTA144ES (R1=47K, R2=47K)



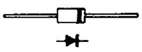
DTC124XS (R1=22K, R2=47K)
DTC144ES (R1=47K, R2=47K)

TOP VIEW (SCALE 4/1)

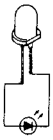


DTC144EK (R1=47K, R2=47K)

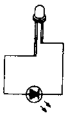
DIODE



10E-2
1S1555
1S1555S
1SS119
1SS133
1SS148
ERB12-? ?
SIB01-02

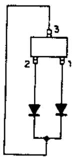


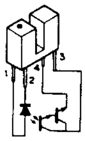
GL-5HD5 : RED



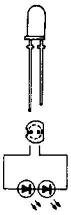
TLY123 : YELLOW
TLUY154 : YELLOW
TLUG154 : GREEN

TOP VIEW (SCALE 4/1) 1S2837

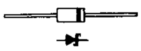




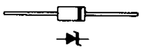
GP-1L52
GP-1L53



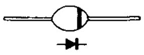
TLY255 ; YELLOW



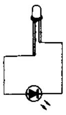
1SS97
1SS97-1



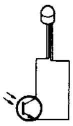
RD ? ?EB ?
RD ? ?ESB ?



U05E
U05G



BR5104S : RED



SPS102

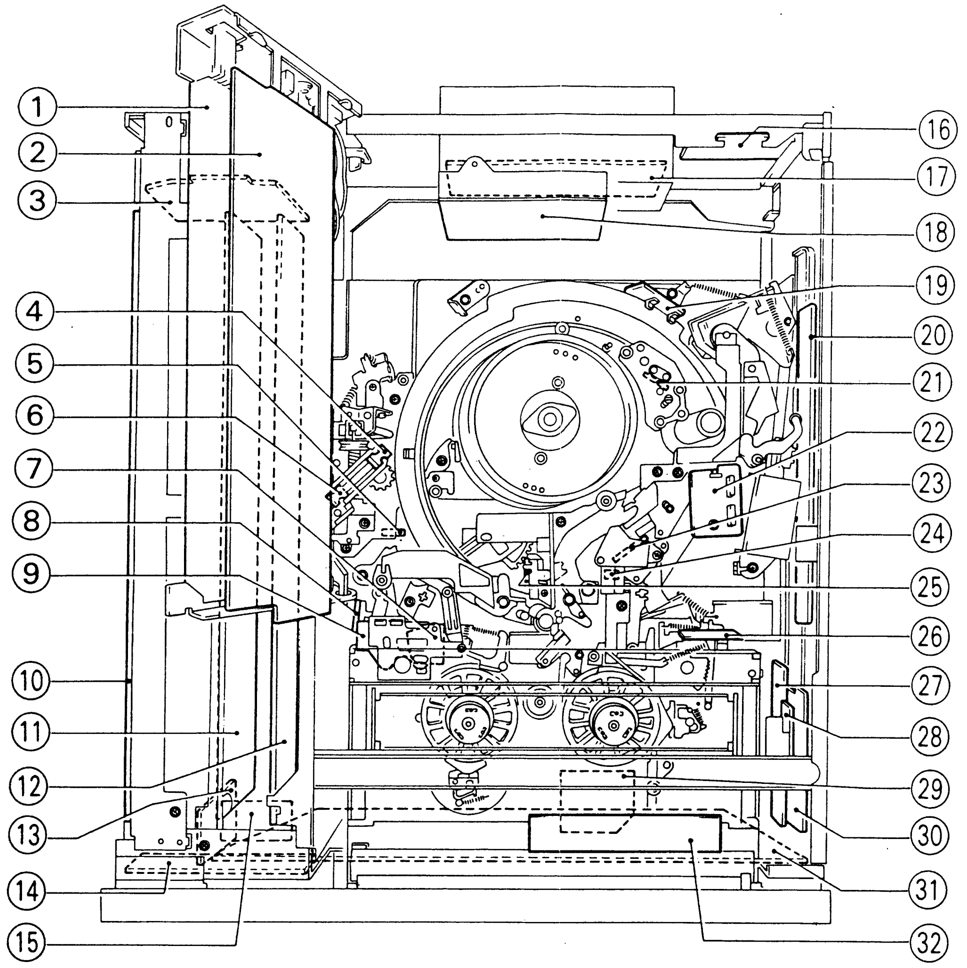
SECTION 14
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARD

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	RP-36A	PB Amplifier
	VO-19A	Y REC/PB (Y/C Separator)
	CO-12	Color REC/PB
AUDIO	AU-82B	PB Amplifier
	AU-89	Dolby
	CP-128	Output Amplifier
	DUS-92	Audio CTL Head
	DUS-147	Audio CTL Head
	HP-30	Headphones
	MC-28	MIC In
	MT-29	Audio Level Meter
SERVO	EC-28	CTL Head
	DUS-92	Audio CTL Head
	DUS-147	Audio CTL Head
	PT-9	Reel Motor Driver
	SV-93G	Servo System
POWER	AC-65	AC Input (UC)
	AC-89	AC Input (EK)
	DC-31	DC Supply (UC)
	DC-31A	DC Supply (EK)
	UR-14	Switching Regulator (UC)
	UR-14E	Switching Regulator (EK)
KEY	KY-105G	Function Key/Display
SYSTEM CONTROL	IF-132	33P Interface
	PD-40	Plunger Solenoids
	PD-41	Plunger Solenoids
	PH-5	Tape Beginning/End Sensor
	SY-106	System Control
OTHERS	CC-31	Cassette Compartment Driver
	CC-32	Cassette In Detector
	CC-33	Cassette Down Detector
	LM-13	Threading Motor
	LP-41	Cassette Compartment Light
	PTC-30	SP, Miss REC. KCA Detector
	PTC-33	FR Stop Detector
	PTC-34	Unthreadend Detector
	PTC-35	S/T Reel Rotation Detector
OTHERS	RM-39	Reel Motor
	SE-46	Tension Regulator Detector
	TG-22	Tension Regulator LED

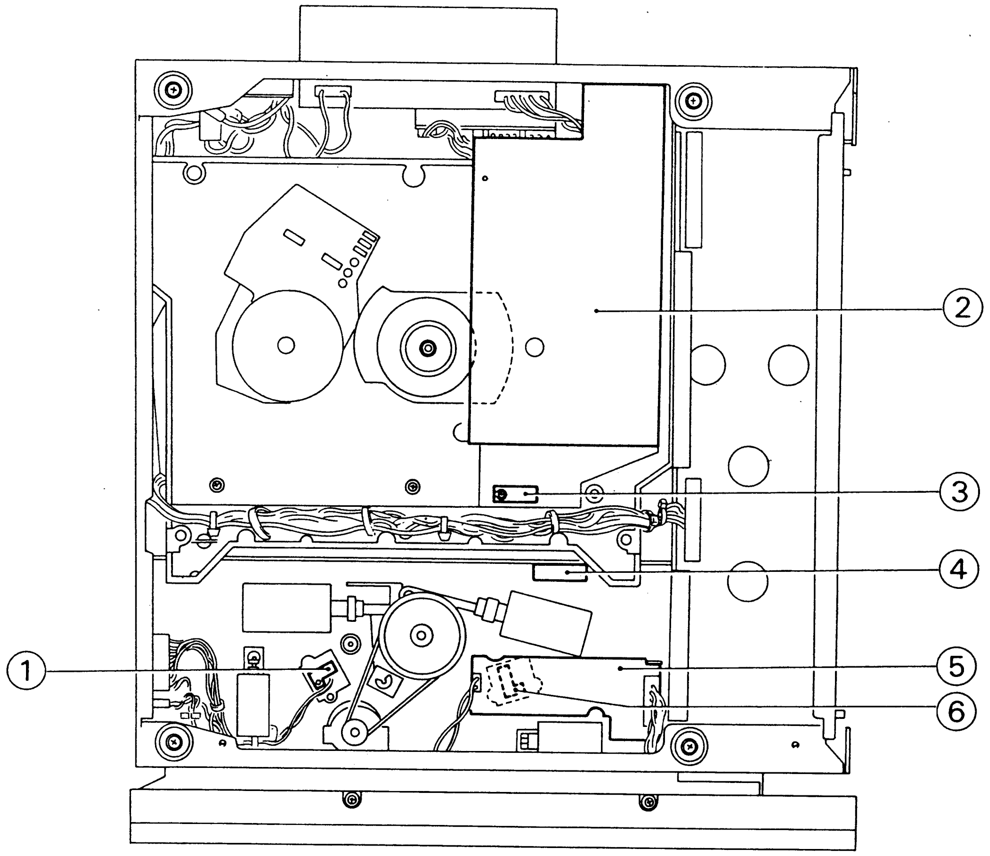
LOCATION OF THE PRINTED CIRCUIT BOARD

(TOP VIEW) (BOTTOM V



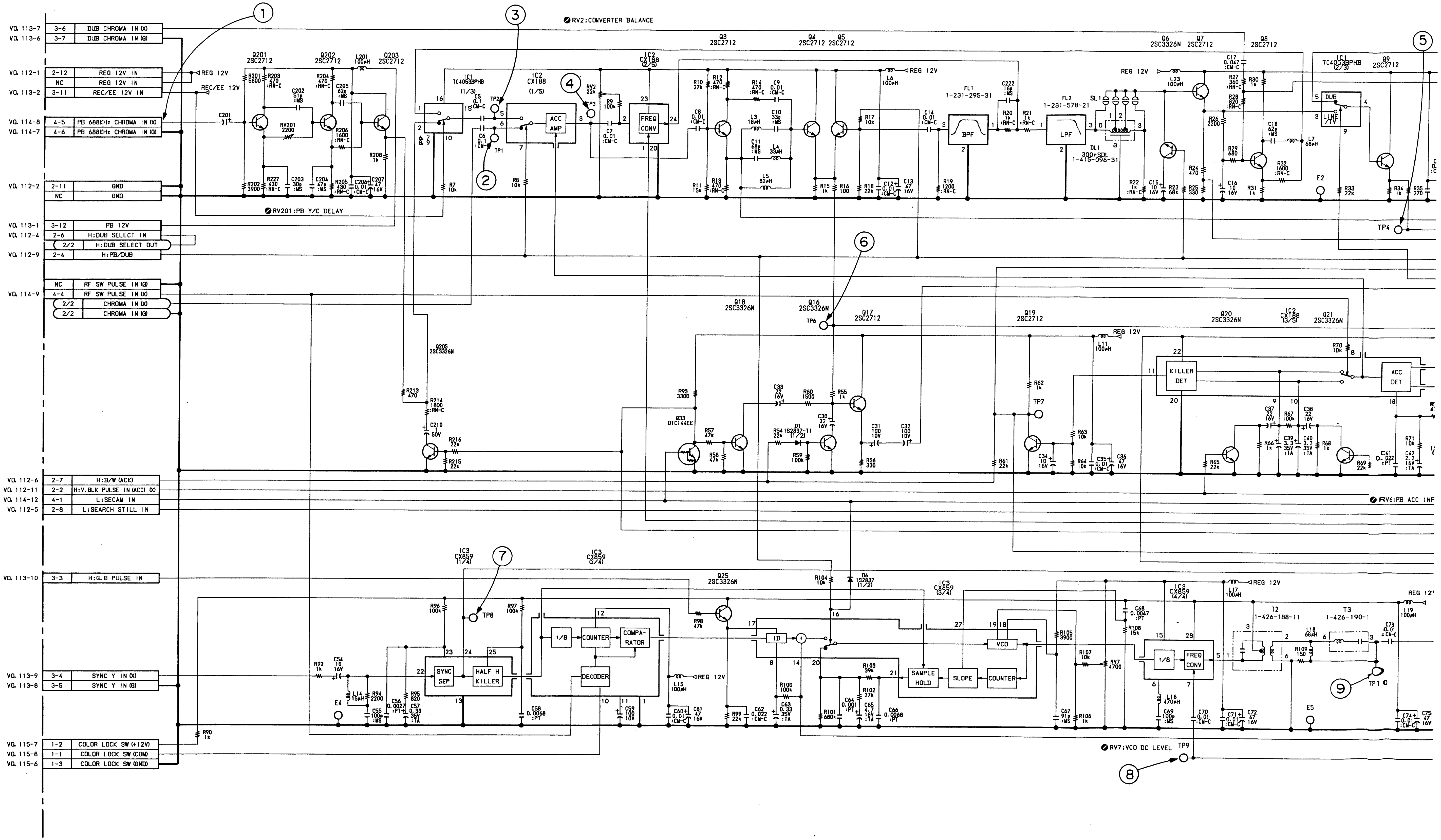
1	VO-19A Board
2	CO-12 Board
3	CP-128 Board
4	PH-5 Board
5	LM-13 Board
6	PH-5 Board
7	SE-46 Board
8	PTC-34 Board
9	PTC-30 Board
10	AU-82B Board
11	SV-93G Board
12	SY-106(1) Board
13	HP-30 Board
14	MT-29 Board
15	MC-28 Board
16	AC-65 Board(UC)
	AC-89 Board(EK)
17	UR-14 Board(UC)
	UR-14E Board(EK)
18	DC-31 Board(UC)
	DC-31A Board(EK)
19	PTC-33 Board
20	RP-36A Board
21	DUS-92 Board
22	DUS-147 Board
23	EC-28 Board
24	PH-5 Board
25	PH-5 Board
26	CC-33 Board
27	CC-32 Board
28	CC-31 Board
29	RM-39 Board
30	PD-40 Board
31	KY-105G Board
32	LP-41 Board

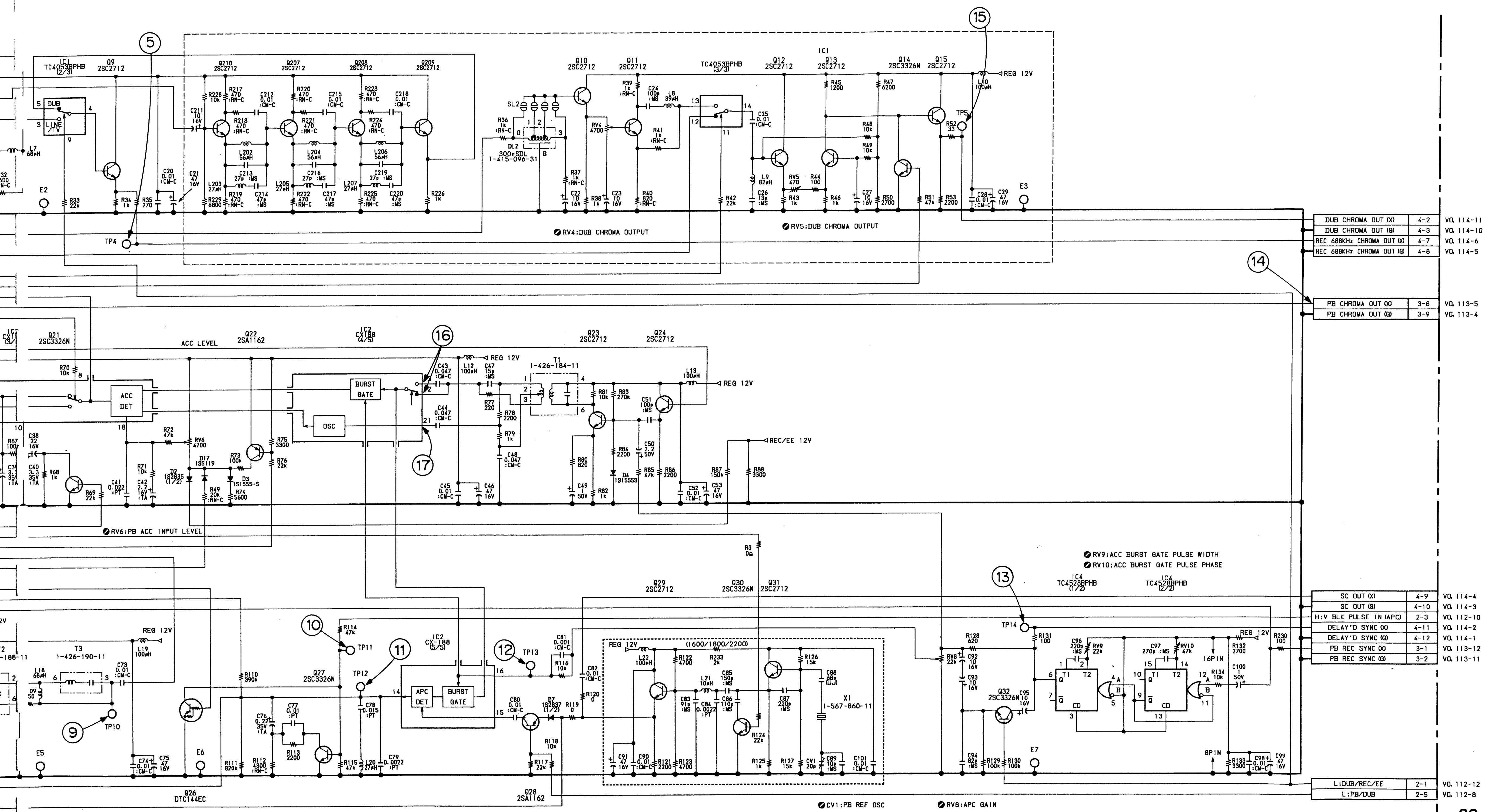
⟨BOTTOM VIEW⟩



1	PTC-35 Board
2	IF-132 Board
3	PT-9 Board
4	TG-22 Board
5	PD-41 Board
6	PTC-35 Board

CO-12(1/2):COLOR REC/PB

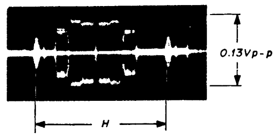

VQ 113-7 3-6 DUB CHROMA IN (X)
VQ 113-6 3-7 DUB CHROMA IN (G)
VQ 112-1 2-12 REG 12V IN
NC REG 12V IN
VQ 113-2 3-11 REC/EE 12V IN
VQ 114-8 4-5 PB 688KHz CHROMA IN (X)
VQ 114-7 4-6 PB 688KHz CHROMA IN (G)
VQ 112-2 2-11 GND
NC GND
VQ 113-1 3-12 PB 12V
VQ 112-4 2-6 H:DUB SELECT IN
2/2 H:DUB SELECT OUT
VQ 112-9 2-4 H:PB/DUB
NC RF SW PULSE IN (G)
VQ 114-9 4-4 RF SW PULSE IN (X)
2/2 CHROMA IN (X)
2/2 CHROMA IN (G)
VQ 112-6 2-7 H:B/W (ACK)
VQ 112-11 2-2 H:V.BLK PULSE IN (ACC) (X)
VQ 114-12 4-1 L:SECAM IN
VQ 112-5 2-8 L:SEARCH STILL IN
VQ 113-10 3-3 H:G.B PULSE IN
VQ 113-9 3-4 SYNC Y IN (X)
VQ 113-8 3-5 SYNC Y IN (G)
VQ 115-7 1-2 COLOR LOCK SW (+12V)
VQ 115-8 1-1 COLOR LOCK SW (COM)
VQ 115-6 1-3 COLOR LOCK SW (GND)
①
②
③
④
⑤
⑥
⑦
⑧
⑨
RV2:CONVERTER BALANCE
RV201:PB Y/C DELAY
RV6:PB ACC INF
RV7:VCO DC LEVEL
REG 12V
REC/EE 12V
Q201 2SC2712
Q202 2SC2712
Q203 2SC2712
Q205 2SC3326N
IC1 TC4053BPHB (1/3)
IC2 CX188 (1/5)
IC2 CX188 (2/5)
IC2 CX188 (3/5)
IC1 TC4053BPHB (2/3)
ACC AMP
FREQ CONV
Q3 2SC2712
Q4 2SC2712
Q5 2SC2712
Q6 2SC3326N
Q7 2SC2712
Q8 2SC2712
Q9 2SC2712
FL1 1-231-295-31
BPF
FL2 1-231-578-21
LPF
SL1
DL1 300nSDL 1-415-096-31
DUB
LINE /TV
TP1
TP2
TP3
TP4
TP6
TP7
TP8
TP9
TP10
E2
E4
E5
Q16 2SC3326N
Q17 2SC2712
Q18 2SC3326N
Q19 2SC2712
Q20 2SC3326N
Q21 2SC3326N
Q33 DTC144EK
D1 1S2837-T1 (1/2)
KILLER DET
ACC DET
IC3 CX859 (1/4)
IC3 CX859 (2/4)
IC3 CX859 (3/4)
IC3 CX859 (4/4)
SYNC SEP
HALF H KILLER
1/8
COUNTER
COMPA-RATOR
DECODER
Q25 2SC3326N
D6 1S2837 (1/2)
ID
VCO
SAMPLE HOLD
SLOPE
COUNTER
FREQ CONV
T2 1-426-188-11
T3 1-426-190-11
REG 12V


IC1 TC4053BPHB (2/3)
Q9 2SC2712
DUB
LINE /TV
L7 68μH
E2
R33 22k
R34 1k
R35 270
C20 0.01 :CM-C
C21 47 16V
TP4
Q210 2SC2712
Q207 2SC2712
Q208 2SC2712
Q209 2SC2712
Q10 2SC2712
Q11 2SC2712
SL2
DL2 300nSDL 1-415-096-31
RV4 4700
TC4053BPHB (3/3)
IC1
Q12 2SC2712
Q13 2SC2712
Q14 2SC3326N
Q15 2SC2712
REG 12V
TP5
E3
RV4:DUB CHROMA OUTPUT
RV5:DUB CHROMA OUTPUT
DUB CHROMA OUT (X) | 4-2 | VO. 114-11
DUB CHROMA OUT (G) | 4-3 | VO. 114-10
REC 688KHz CHROMA OUT (X) | 4-7 | VO. 114-6
REC 688KHz CHROMA OUT (G) | 4-8 | VO. 114-5
PB CHROMA OUT (X) | 3-8 | VO. 113-5
PB CHROMA OUT (G) | 3-9 | VO. 113-4
IC2 CX188 (3/5)
Q21 2SC3326N
ACC LEVEL
Q22 2SA1162
IC2 CX188 (4/5)
Q23 2SC2712
Q24 2SC2712
ACC DET
BURST GATE
OSC
T1 1-426-184-11
REG 12V
REC/EE 12V
D17 1SS119
D2 1S2835 (1/2)
D3 1S1555-S
D4 1S1555S
RV6 4700
RV6:PB ACC INPUT LEVEL
RV9:ACC BURST GATE PULSE WIDTH
RV10:ACC BURST GATE PULSE PHASE
Q29 2SC2712
Q30 2SC3326N
Q31 2SC2712
IC4 TC4528BPHB (1/2)
IC4 TC4528BPHB (2/2)
T3 1-426-190-11
L18 68μH
L19 100μH
TP10
TP11
TP12
TP13
TP14
Q27 2SC3326N
IC2 CX-188 (5/5)
APC DET
BURST GATE
D7 1S2837 (1/2)
REG 12V
(1600/1800/2200)
X1 1-567-860-11
Q32 2SC3326N
16PIN
8PIN
E5
E6
E7
Q26 DTC144EC
Q28 2SA1162
CV1:PB REF OSC
RV8:APC GAIN
SC OUT (X) | 4-9 | VO. 114-4
SC OUT (G) | 4-10 | VO. 114-3
H:V BLK PULSE IN (APC) | 2-3 | VO. 112-10
DELAY'D SYNC (X) | 4-11 | VO. 114-2
DELAY'D SYNC (G) | 4-12 | VO. 114-1
PB REC SYNC (X) | 3-1 | VO. 113-12
PB REC SYNC (G) | 3-2 | VO. 113-11
L:DUB/REC/EE | 2-1 | VO. 112-12
L:PB/DUB | 2-5 | VO. 112-8
⑤
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰

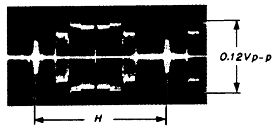
CO-12 (1/2)

1-625-504-11
VO-7630

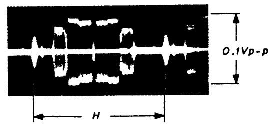
① CN4
⑤Pin
PB



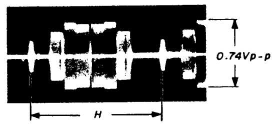
② TP1
EE



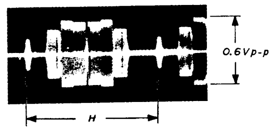
③ TP2
PB



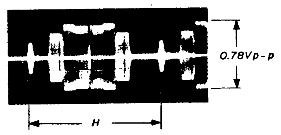
④ TP3
EE



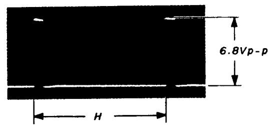
⑤ TP4
EE



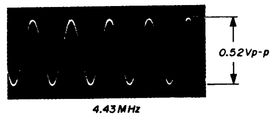
⑥ TP6
EE



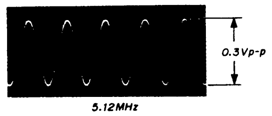
⑦ TP8
EE



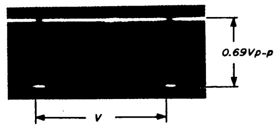
⑧ TP9
EE



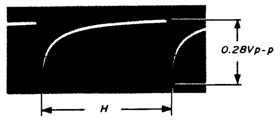
⑨ TP10
EE



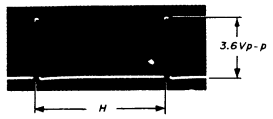
⑩ TP11
PB



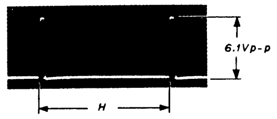
⑪ TP12
EE



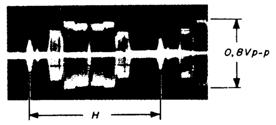
⑫ TP13
EE



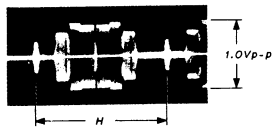
⑬ TP14
EE



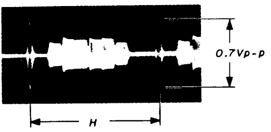
⑭ CN3
⑧Pin
PB



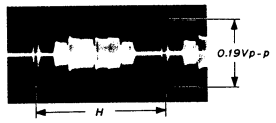
⑮ TP5
EE



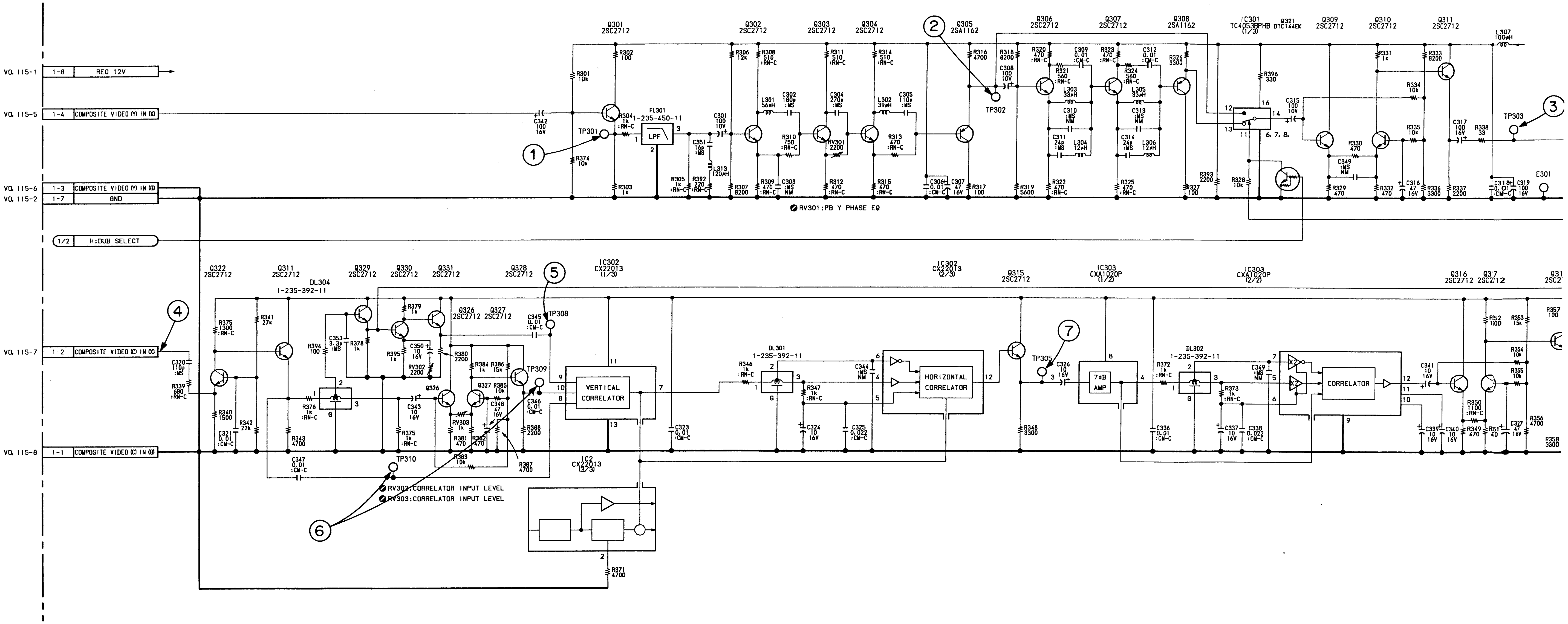
⑯ IC2
⑫,⑬Pin
EE

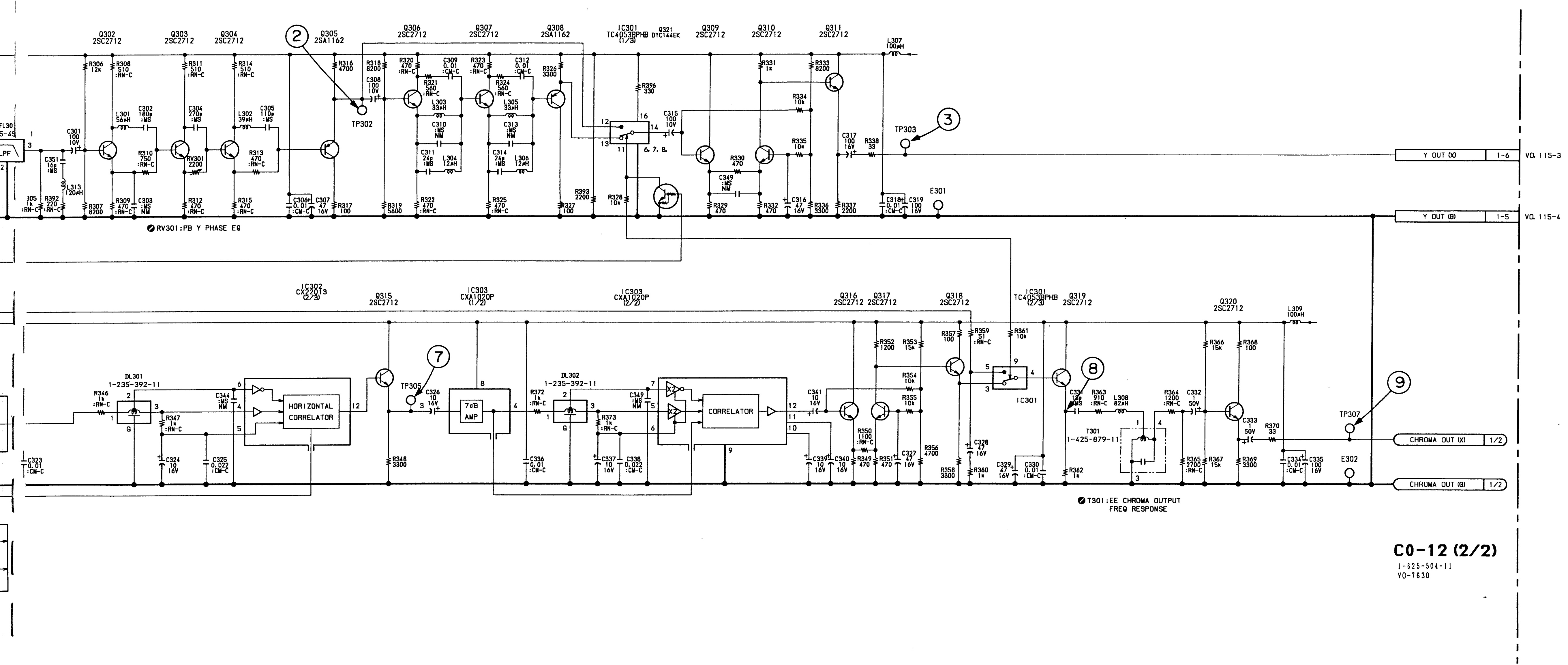


⑰ IC2
㉑Pin



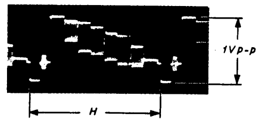
CO-12(2/2):COLOR REC/PB


VQ 115-1
1-8 REG 12V
VQ 115-5
1-4 COMPOSITE VIDEO (Y) IN (O)
VQ 115-6
1-3 COMPOSITE VIDEO (Y) IN (G)
VQ 115-2
1-7 GND
1/2 H:DUB SELECT
VQ 115-7
1-2 COMPOSITE VIDEO (C) IN (O)
VQ 115-8
1-1 COMPOSITE VIDEO (C) IN (G)
Q301 2SC2712
Q302 2SC2712
Q303 2SC2712
Q304 2SC2712
Q305 2SA1162
Q306 2SC2712
Q307 2SC2712
Q308 2SA1162
IC301 TC4053BPHB (1/3)
Q321 DTC144EK
Q309 2SC2712
Q310 2SC2712
Q311 2SC2712
FL301 1-235-450-11
LPF
TP301
TP302
TP303
E301
L307 100μH
RV301:PB Y PHASE EQ
Q322 2SC2712
Q311 2SC2712
DL304 1-235-392-11
Q329 2SC2712
Q330 2SC2712
Q331 2SC2712
Q328 2SC2712
Q326 2SC2712
Q327 2SC2712
IC302 CX22013 (1/3)
VERTICAL CORRELATOR
IC2 CX22013 (3/3)
IC302 CX22013 (2/3)
DL301 1-235-392-11
HORIZONTAL CORRELATOR
Q315 2SC2712
IC303 CXA1020P (1/2)
7dB AMP
DL302 1-235-392-11
IC303 CXA1020P (2/2)
CORRELATOR
Q316 2SC2712
Q317 2SC2712
TP305
TP308
TP309
TP310
RV302:CORRELATOR INPUT LEVEL
RV303:CORRELATOR INPUT LEVEL
R371 4700
①
②
③
④
⑤
⑥
⑦

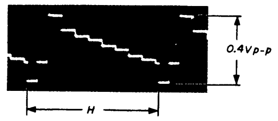


Q302 2SC2712
Q303 2SC2712
Q304 2SC2712
Q305 2SA1162
Q306 2SC2712
Q307 2SC2712
Q308 2SA1162
IC301 TC4053BPHB (1/3)
Q321 DTC144EK
Q309 2SC2712
Q310 2SC2712
Q311 2SC2712
L307 100µH
TP302
TP303
E301
FL301
LPF
RV301:PB Y PHASE EQ
RV301 2200
Y OUT (X)
1-6
VO. 115-3
Y OUT (G)
1-5
VO. 115-4
IC302 CX22013 (2/3)
Q315 2SC2712
IC303 CXA1020P (1/2)
IC303 CXA1020P (2/2)
Q316 2SC2712
Q317 2SC2712
Q318 2SC2712
IC301 TC4053BPHB (2/3)
Q319 2SC2712
Q320 2SC2712
L309 100µH
DL301 1-235-392-11
DL302 1-235-392-11
HORIZONTAL CORRELATOR
7dB AMP
CORRELATOR
TP305
IC301
T301 1-425-879-11
TP307
E302
CHROMA OUT (X)
1/2
CHROMA OUT (G)
1/2
T301:EE CHROMA OUTPUT FREQ RESPONSE
②
③
⑦
⑧
⑨
CO-12 (2/2)
1-625-504-11
VO-7630

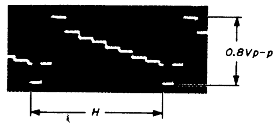
① TP301
EE



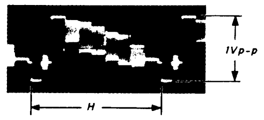
② TP302
EE



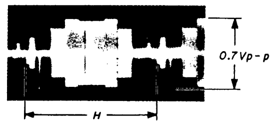
③ TP303
EE



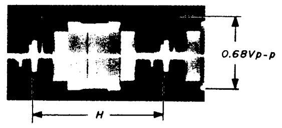
④ CN131
②Pin
EE



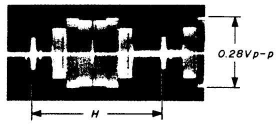
⑤ TP308
EE



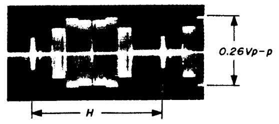
⑥ TP309
TP310
EE



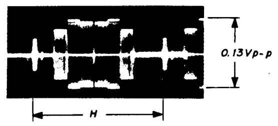
⑦ TP305
EE



⑧ TP306
EE



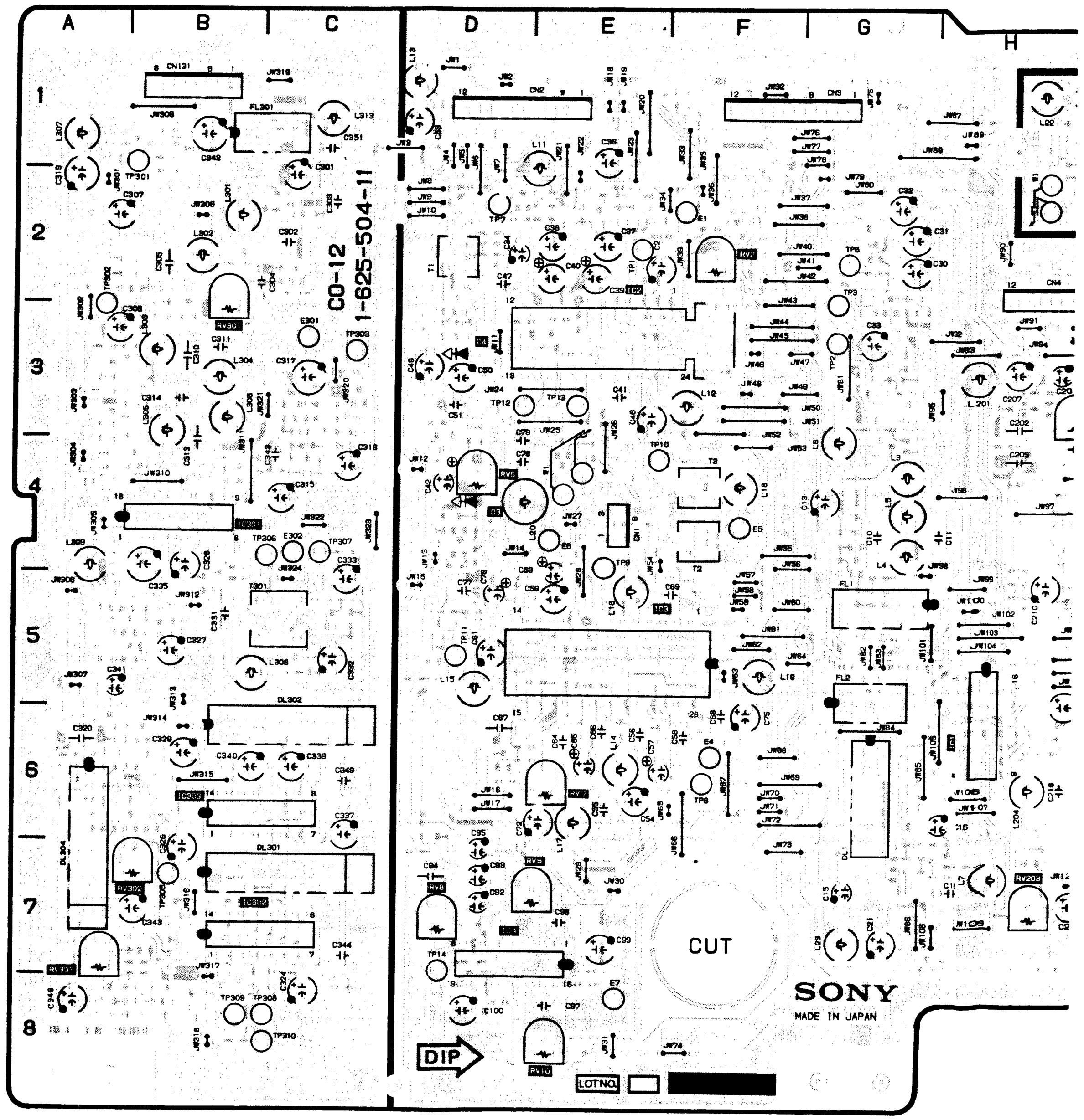
⑨ TP307
EE

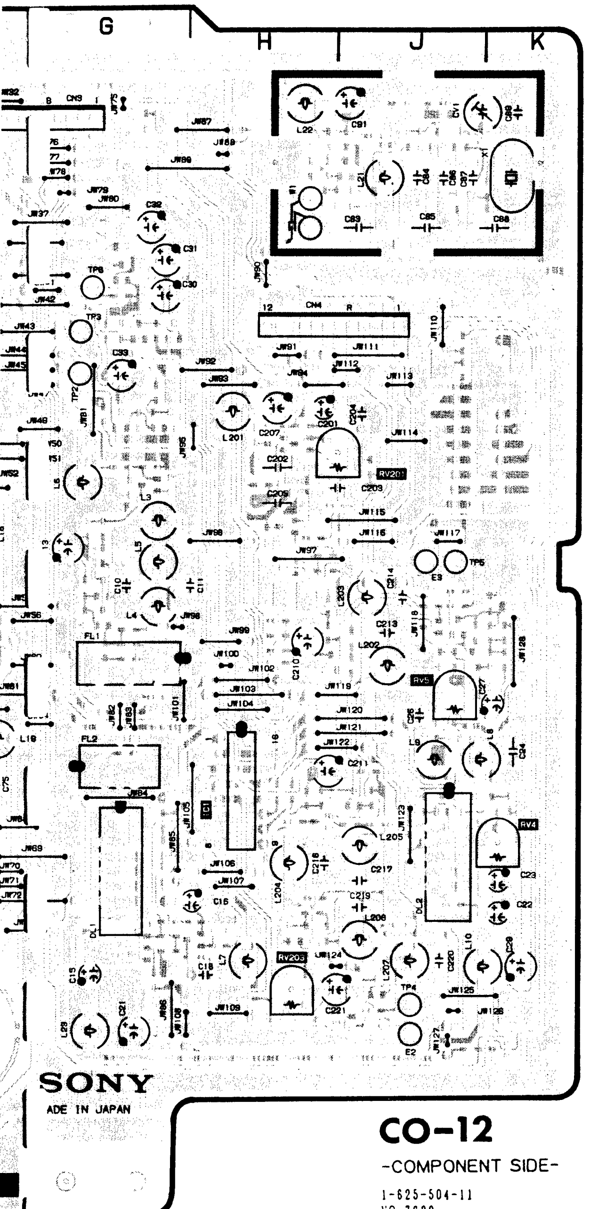


CO-12:COLOR REC/PB

CO-12 (1-625-504-11) C

CN1	E-4
CN2	D-1
CN3	F-1
CN4	H-2
CN131	B-1
CV1	J-1
D3	D-4
D4	D-3
DL1	G-6
DL2	J-6
DL301	C-7
DL302	C-6
DL304	A-7
E1	F-2
E2	J-7
E3	J-4
E4	F-6
E5	F-4
E6	E-4
E7	E-8
E301	C-3
E302	C-4
FL1	G-5
FL2	G-5
FL301	B-1
IC1	H-6
IC2	E-3
IC3	E-5
IC4	D-7
IC301	B-4
IC302	B-7
IC303	B-6
RV2	F-2
RV4	K-6
RV5	J-5
RV6	D-4
RV7	E-6
RV8	D-7
RV9	D-7
RV10	E-8
RV201	J-3
RV203	H-7
RV301	B-3
RV302	B-7
RV303	A-7
T1	D-2
T2	F-4
T3	F-4
T301	C-5
TP1	E-2
TP2	G-4
TP3	G-3
TP4	J-7
TP5	J-4
TP6	G-2
TP7	D-2
TP8	F-6
TP9	E-4
TP10	E-4
TP11	D-5
TP12	D-3
TP13	E-3
TP14	D-7
TP301	B-1
TP302	A-3
TP303	C-3
TP305	B-7
TP306	C-4
TP307	C-4
TP308	C-8
TP309	B-8
TP310	C-8
X1	K-1





CO-12

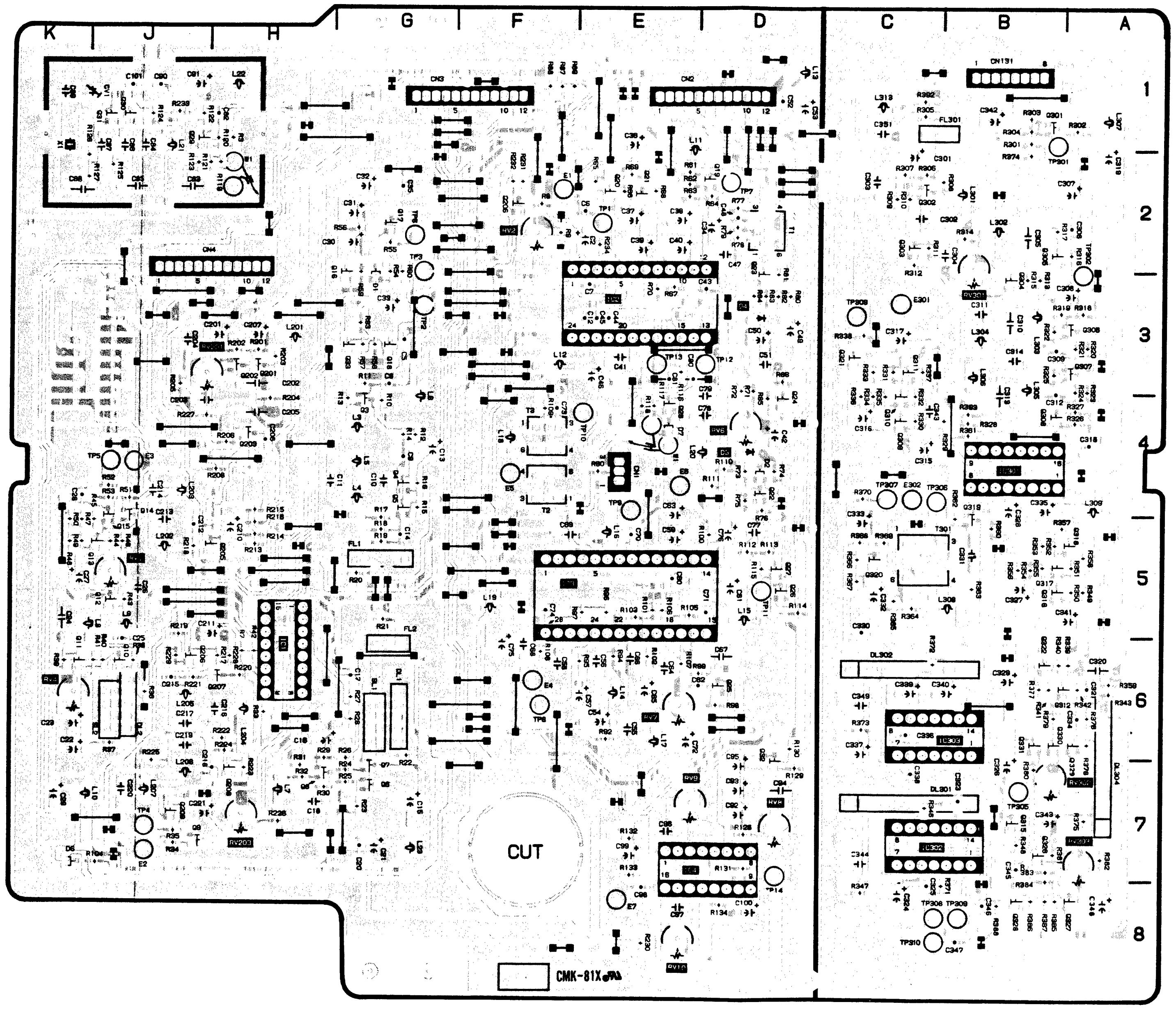
-COMPONENT SIDE-

1-625-504-11
VO-7630

CO-12 (1-625-504-11) S

CN1	E-4
CN2	D-1
CN3	F-1
CN4	H-2
CN131	B-1
CV1	J-1
D1	G-2
D2	D-4
D3	D-4
D4	D-3
D6	K-7
D7	E-4
DL1	G-6
DL2	J-6
DL301	C-7
DL302	C-6
DL304	A-7
E1	F-2
E2	J-7
E3	J-4
E4	F-6
E5	F-4
E6	E-4
E7	E-8
E301	C-3
E302	C-4
FL1	G-5
FL2	G-5
FL301	B-1
IC1	H-6
IC2	E-3
IC3	E-5
IC4	D-7
IC301	B-4
IC302	B-7
IC303	B-6
Q3	G-3
Q4	G-4
Q5	G-4
Q6	G-7
Q7	G-7
Q8	H-7
Q9	J-7
Q10	J-6
Q11	K-6
Q12	J-5
Q13	J-5
Q14	J-4
Q15	J-4
Q16	G-2
Q17	G-2
Q18	G-3
Q19	D-2
Q20	E-2
Q21	E-2
Q22	D-4
Q23	D-2
Q24	D-4
Q25	D-6
Q26	D-5
Q27	D-5
Q28	E-4
Q29	J-1
Q30	J-1
Q31	J-1
Q32	D-6
Q33	G-3
Q201	H-3
Q202	H-3
Q203	H-4
Q205	J-5
Q206	F-2
Q207	H-6
Q208	H-7
Q209	J-7
Q210	J-6

Q301	B-1
Q302	C-2
Q303	C-2
Q304	B-3
Q305	B-2
Q306	A-3
Q307	A-3
Q308	B-4
Q309	C-4
Q310	C-4
Q311	C-3
Q312	B-6
Q315	B-7
Q316	B-5
Q317	B-5
Q318	A-5
Q319	B-4
Q320	C-5
Q321	C-3
Q322	B-6
Q326	B-7
Q327	B-8
Q328	B-8
Q329	A-6
Q330	B-6
Q331	B-6
RV2	F-2
RV4	K-6
RV5	J-5
RV6	D-4
RV7	E-6
RV8	D-7
RV9	D-7
RV10	E-8
RV201	J-3
RV203	H-7
RV301	B-3
RV302	B-7
RV303	A-7
SL1	G-6
SL2	J-7
T1	D-2
T2	F-4
T3	F-4
T301	C-5
TP1	E-2
TP2	G-4
TP3	G-3
TP4	J-7
TP5	J-4
TP6	G-2
TP7	D-2
TP8	F-6
TP9	E-4
TP10	E-4
TP11	D-5
TP12	D-3
TP13	E-3
TP14	D-7
TP301	B-1
TP302	A-3
TP303	C-3
TP305	B-7
TP306	C-4
TP307	C-4
TP308	C-8
TP309	B-8
TP310	B-8
X1	K-1

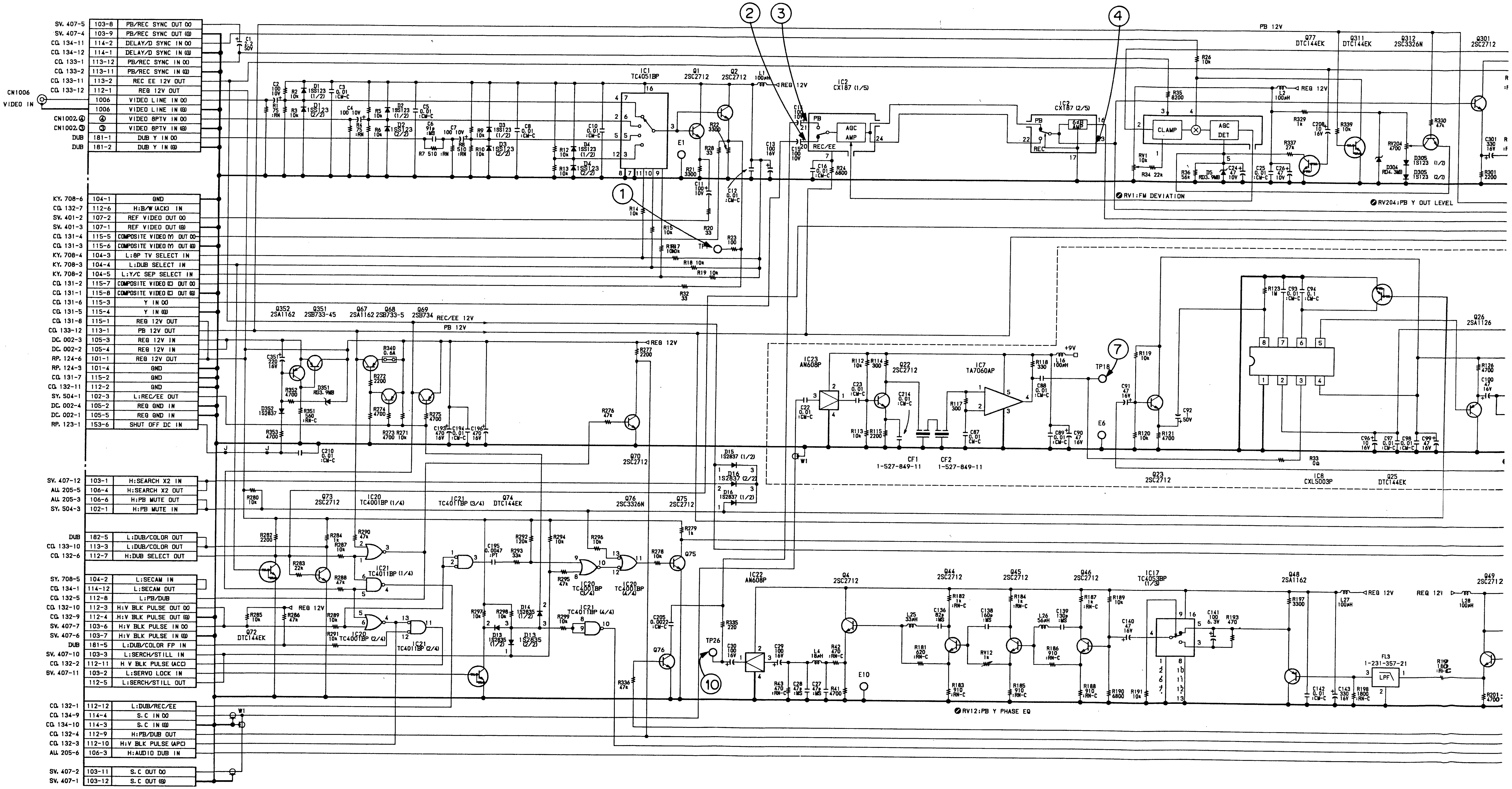


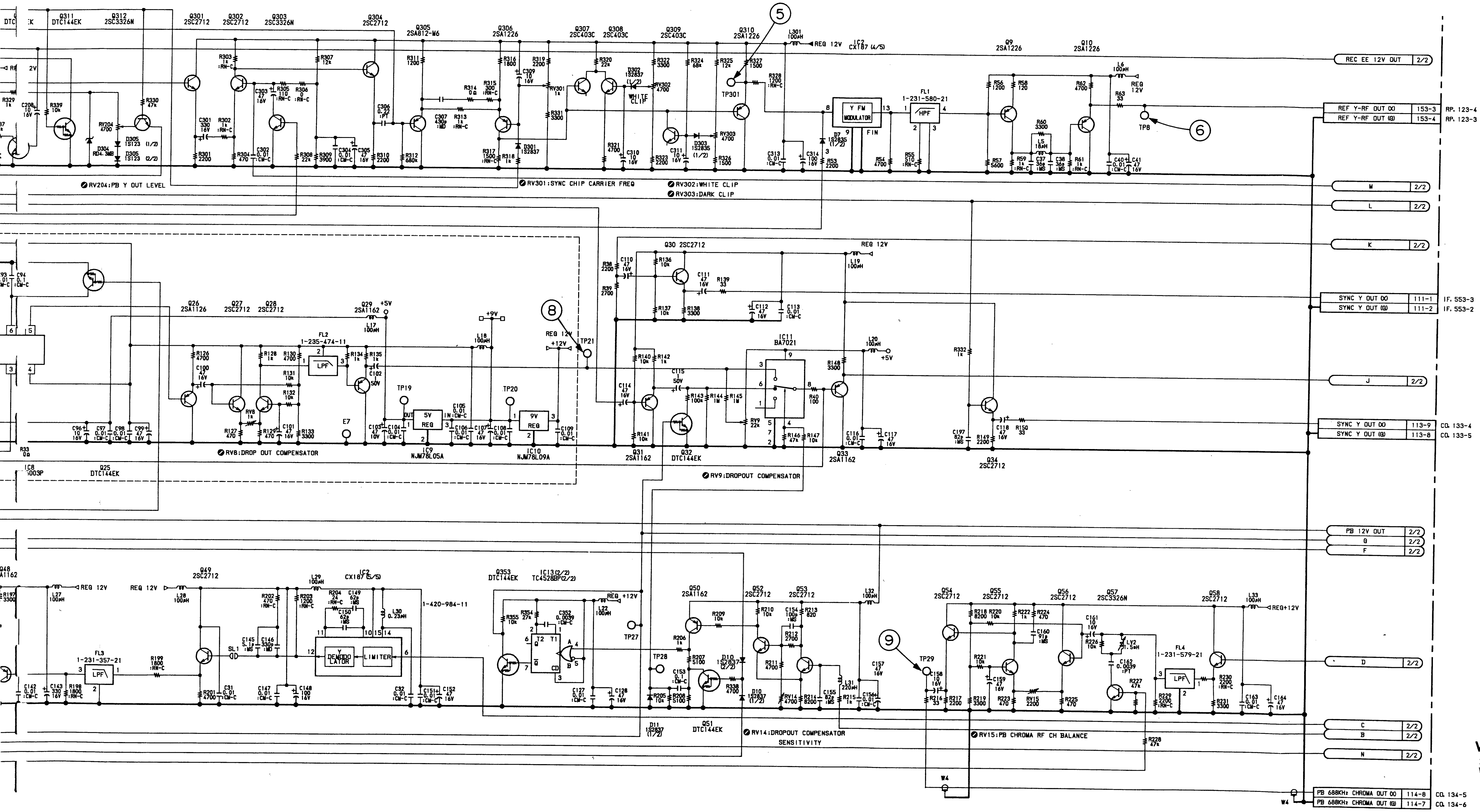
CO-12

-SOLDERING SIDE-

1-625-504-11
VO-7630

VO-19A(1/2):Y REC/PB(Y/C SEPARATOR)

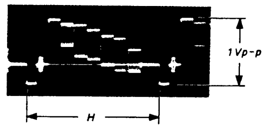

SV. 407-5 | 103-8 | PB/REC SYNC OUT (X)
SV. 407-4 | 103-9 | PB/REC SYNC OUT (G)
CQ. 134-11 | 114-2 | DELAY/D SYNC IN (X)
CQ. 134-12 | 114-1 | DELAY/D SYNC IN (G)
CQ. 133-1 | 113-12 | PB/REC SYNC IN (X)
CQ. 133-2 | 113-11 | PB/REC SYNC IN (G)
CQ. 133-11 | 113-2 | REC EE 12V OUT
CQ. 133-12 | 112-1 | REG 12V OUT
CN1006
VIDEO IN
1006 | VIDEO LINE IN (X)
1006 | VIDEO LINE IN (G)
CN1002 ④ | ④ | VIDEO 8PTV IN (X)
CN1002 ③ | ③ | VIDEO 8PTV IN (G)
DUB | 181-1 | DUB Y IN (X)
DUB | 181-2 | DUB Y IN (G)
KY. 708-6 | 104-1 | GND
CQ. 132-7 | 112-6 | H:B/W (ACK) IN
SV. 401-2 | 107-2 | REF VIDEO OUT (X)
SV. 401-3 | 107-1 | REF VIDEO OUT (G)
CQ. 131-4 | 115-5 | COMPOSITE VIDEO (Y) OUT (X)
CQ. 131-3 | 115-6 | COMPOSITE VIDEO (Y) OUT (G)
KY. 708-4 | 104-3 | L:8P TV SELECT IN
KY. 708-3 | 104-4 | L:DUB SELECT IN
KY. 708-2 | 104-5 | L:Y/C SEP SELECT IN
CQ. 131-2 | 115-7 | COMPOSITE VIDEO (C) OUT (X)
CQ. 131-1 | 115-8 | COMPOSITE VIDEO (C) OUT (G)
CQ. 131-6 | 115-3 | Y IN (X)
CQ. 131-5 | 115-4 | Y IN (G)
CQ. 131-8 | 115-1 | REG 12V OUT
CQ. 133-12 | 113-1 | PB 12V OUT
DC. 002-3 | 105-3 | REG 12V IN
DC. 002-2 | 105-4 | REG 12V IN
RP. 124-6 | 101-1 | REG 12V OUT
RP. 124-3 | 101-4 | GND
CQ. 131-7 | 115-2 | GND
CQ. 132-11 | 112-2 | GND
SY. 504-1 | 102-3 | L:REC/EE OUT
DC. 002-4 | 105-2 | REG GND IN
DC. 002-1 | 105-5 | REG GND IN
RP. 123-1 | 153-6 | SHUT OFF DC IN
SV. 407-12 | 103-1 | H:SEARCH X2 IN
AU. 205-5 | 106-4 | H:SEARCH X2 OUT
AU. 205-3 | 106-6 | H:PB MUTE OUT
SY. 504-3 | 102-1 | H:PB MUTE IN
DUB | 182-5 | L:DUB/COLOR OUT
CQ. 133-10 | 113-3 | L:DUB/COLOR OUT
CQ. 132-6 | 112-7 | H:DUB SELECT OUT
SY. 708-5 | 104-2 | L:SECAM IN
CQ. 134-1 | 114-12 | L:SECAM OUT
CQ. 132-5 | 112-8 | L:PB/DUB
CQ. 132-10 | 112-3 | H:V BLK PULSE OUT (X)
CQ. 132-9 | 112-4 | H:V BLK PULSE OUT (G)
SV. 407-7 | 103-6 | H:V BLK PULSE IN (X)
SV. 407-6 | 103-7 | H:V BLK PULSE IN (G)
DUB | 181-5 | L:DUB/COLOR FP IN
SV. 407-10 | 103-3 | L:SERCH/STILL IN
CQ. 132-2 | 112-11 | H V BLK PULSE (ACC)
SV. 407-11 | 103-2 | L:SERVO LOCK IN
112-5 | L:SERCH/STILL OUT
CQ. 132-1 | 112-12 | L:DUB/REC/EE
CQ. 134-9 | 114-4 | S.C IN (X)
CQ. 134-10 | 114-3 | S.C IN (G)
CQ. 132-4 | 112-9 | H:PB/DUB OUT
CQ. 132-3 | 112-10 | H:V BLK PULSE (APC)
AU. 205-6 | 106-3 | H:AUDIO DUB IN
SV. 407-2 | 103-11 | S.C OUT (X)
SV. 407-1 | 103-12 | S.C OUT (G)
IC1 TC4051BP
Q1 2SC2712
Q2 2SC2712
IC2 CX187 (1/5)
IC2 CX187 (2/5)
PB
REC/EE
AGC AMP
6dB AMP
REC
CLAMP
AGC DET
REG 12V
PB 12V
Q77 DTC144EK
Q311 DTC144EK
Q312 2SC3326N
Q301 2SC2712
RV1:FM DEVIATION
RV204:PB Y OUT LEVEL
①
②
③
④
⑦
⑩
TP1
TP18
TP26
E1
E6
E10
Q352 2SA1162
Q351 2SB733-45
Q67 2SA1162
Q68 2SB733-5
Q69 2SB734
REC/EE 12V
Q70 2SC2712
IC23 AN608P
Q22 2SC2712
IC7 TA7060AP
+9V
CF1 1-527-849-11
CF2 1-527-849-11
Q23 2SC2712
IC8 CXL5003P
Q25 DTC144EK
Q26 2SA1126
Q73 2SC2712
IC20 TC4001BP (1/4)
IC21 TC4011BP (3/4)
Q74 DTC144EK
Q76 2SC3326N
Q75 2SC2712
IC21 TC4011BP (1/4)
IC20 TC4001BP (3/4)
IC20 TC4001BP (4/4)
IC20 TC4001BP (2/4)
IC21 TC4011BP (2/4)
IC21 TC4011BP (4/4)
Q72 DTC144EK
D15 1S2837 (1/2)
D16 1S2837 (2/2)
D16 1S2837 (1/2)
IC22 AN608P
Q4 2SC2712
Q44 2SC2712
Q45 2SC2712
Q46 2SC2712
IC17 TC4053BP (1/3)
Q48 2SA1162
Q49 2SC2712
FL3 1-231-357-21
LPF
RV12:PB Y PHASE EQ
W1
J


Q311 DTC144EK
Q312 2SC3326N
Q301 2SC2712
Q302 2SC2712
Q303 2SC3326N
Q304 2SC2712
Q305 2SA812-M6
Q306 2SA1226
Q307 2SC403C
Q308 2SC403C
Q309 2SC403C
Q310 2SA1226
REG 12V
IC2 CX187 (4/5)
Q9 2SA1226
Q10 2SA1226
Y FM MODULATOR
FIN
FL1 1-231-580-21
HPF
TP301
TP8
⑤
⑥
WHITE CLIP
REC EE 12V OUT 2/2
REF Y-RF OUT (X) 153-3 RP. 123-4
REF Y-RF OUT (G) 153-4 RP. 123-3
RV204:PB Y OUT LEVEL
RV301:SYNC CHIP CARRIER FREQ
RV302:WHITE CLIP
RV303:DARK CLIP
M 2/2
L 2/2
K 2/2
Q30 2SC2712
Q26 2SA1126
Q27 2SC2712
Q28 2SC2712
Q29 2SA1162
FL2 1-235-474-11
LPF
TP19
TP20
TP21
⑧
5V REG
9V REG
IC9 NJM78L05A
IC10 NJM78L09A
IC11 BA7021
Q31 2SA1162
Q32 DTC144EK
Q33 2SA1162
Q34 2SC2712
Q25 DTC144EK
IC8 ~003P
RV8:DROP OUT COMPENSATOR
RV9:DROPOUT COMPENSATOR
SYNC Y OUT (X) 111-1 IF. 553-3
SYNC Y OUT (G) 111-2 IF. 553-2
J 2/2
SYNC Y OUT (X) 113-9 CO. 133-4
SYNC Y OUT (G) 113-8 CO. 133-5
PB 12V OUT 2/2
G 2/2
F 2/2
Q48 2SA1162
Q49 2SC2712
FL3 1-231-357-21
LPF
IC2 CX187 (5/5)
DEMODULATOR
LIMITER
1-420-984-11
Q353 DTC144EK
IC13 (2/2) TC4528BP (2/2)
TP27
TP28
Q50 2SA1162
Q51 DTC144EK
Q52 2SC2712
Q53 2SC2712
TP29
⑨
Q54 2SC2712
Q55 2SC2712
Q56 2SC2712
Q57 2SC3326N
Q58 2SC2712
FL4 1-231-579-21
LPF
RV14:DROPOUT COMPENSATOR SENSITIVITY
RV15:PB CHROMA RF CH BALANCE
D 2/2
C 2/2
B 2/2
N 2/2
W4
PB 688KHz CHROMA OUT (X) 114-8 CO. 134-5
PB 688KHz CHROMA OUT (G) 114-7 CO. 134-6

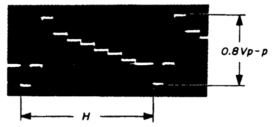
VO-19A (1/2)

1-625-502-21
VO-7630

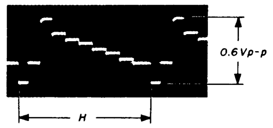
① TP1
EE



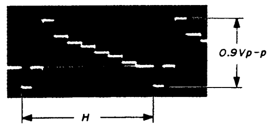
② IC2
⑳Pin
EE



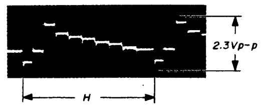
③ IC2
㉑Pin
PB



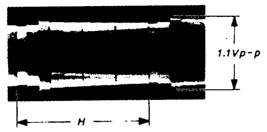
④ IC2
㉓Pin
EE



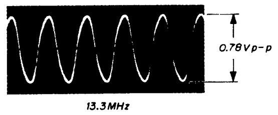
⑤ TP301
EE



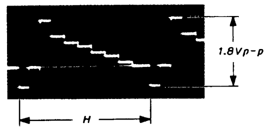
⑥ TP8
EE



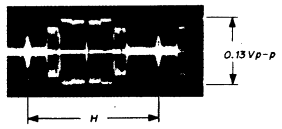
⑦ TP18
EE



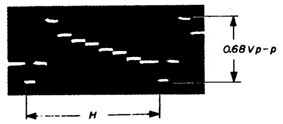
⑧ TP21
EE



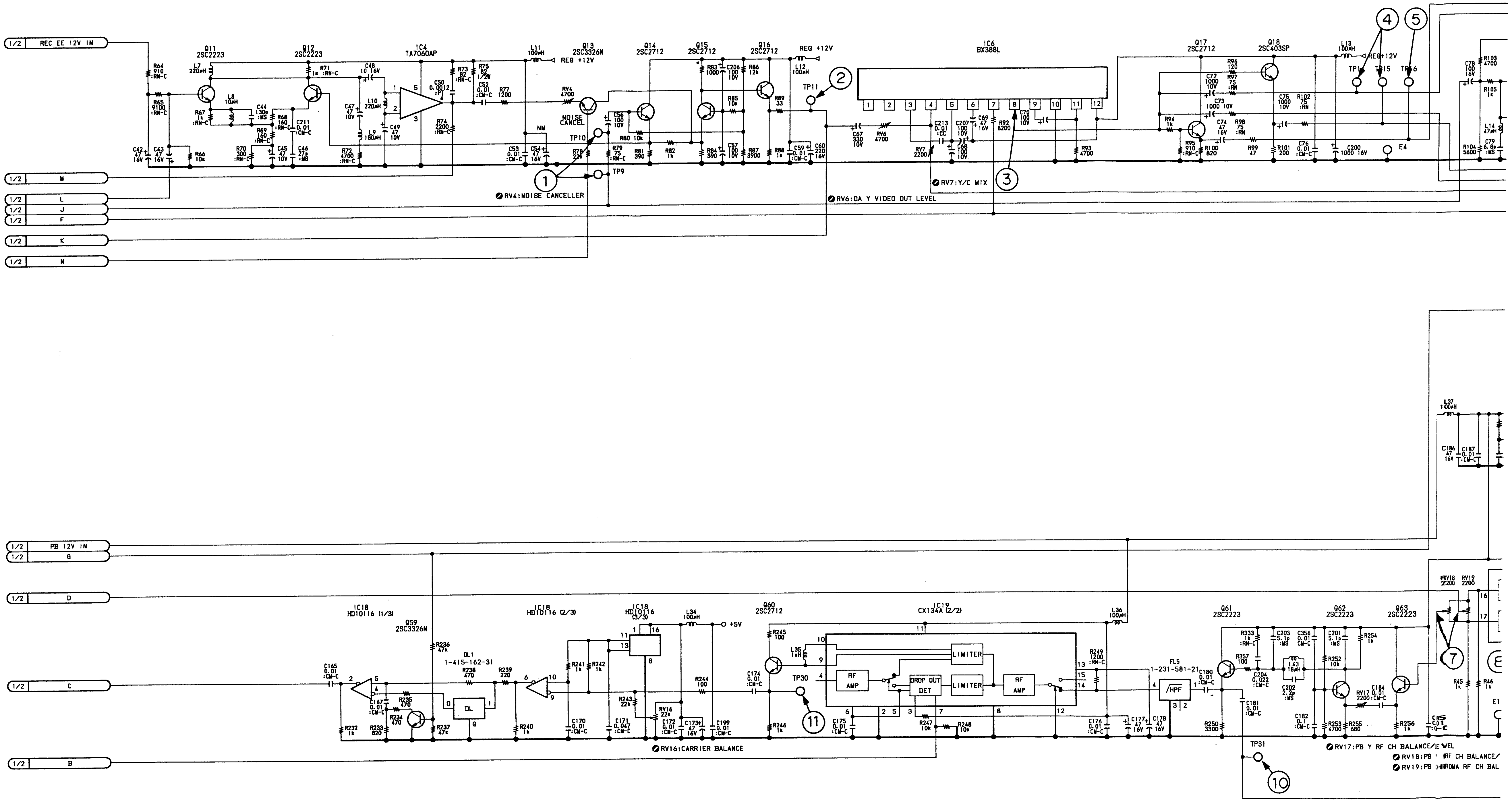
⑨ TP29
PB

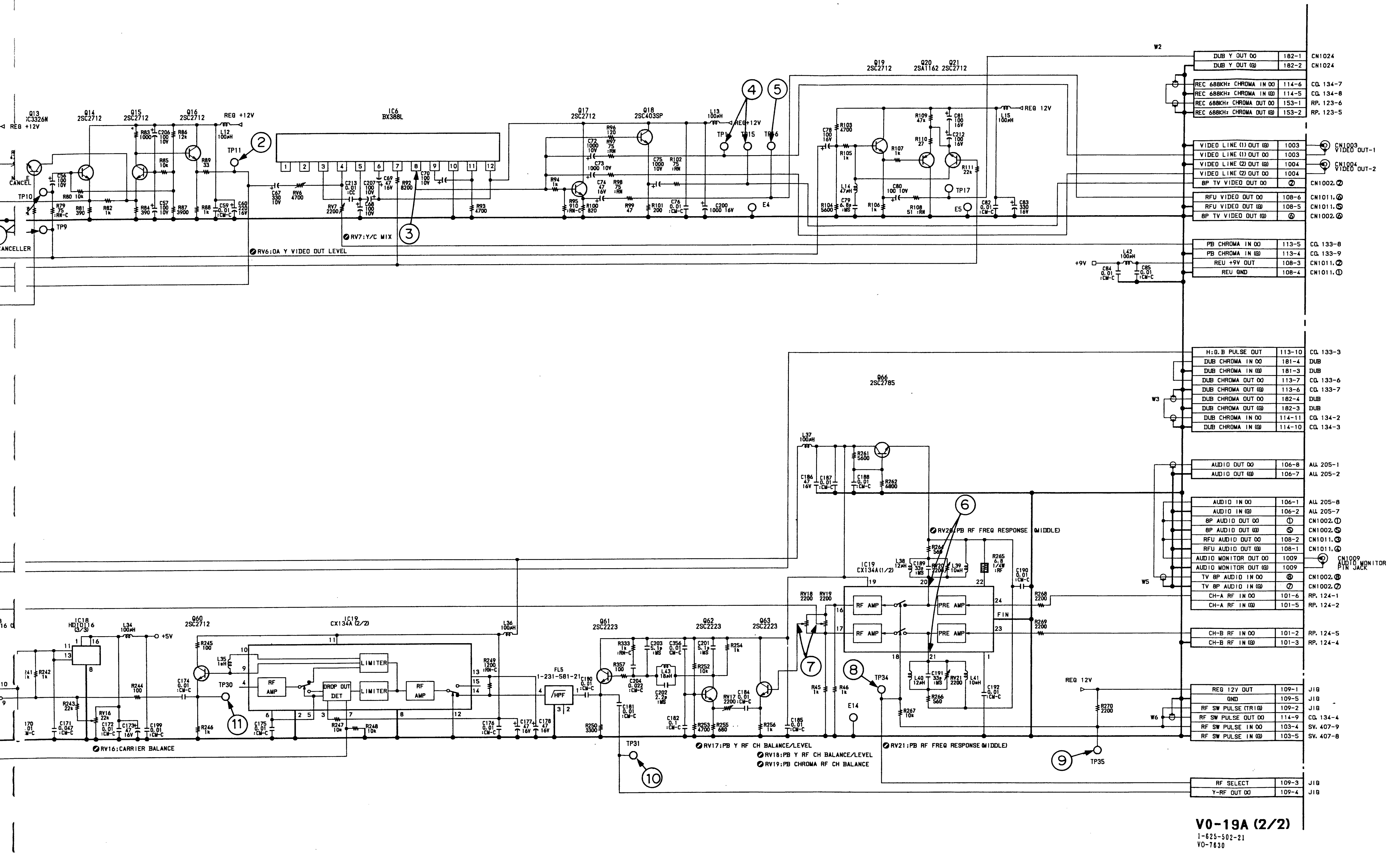


⑩ TP26
PB

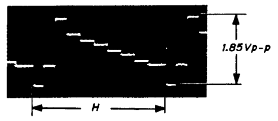


VO-19A(2/2):Y REC/PB(Y/C SEPARATOR)

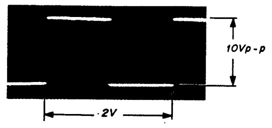

1/2 REC EE 12V IN
1/2 M
1/2 L
1/2 J
1/2 F
1/2 K
1/2 N
Q11 2SC2223
Q12 2SC2223
IC4 TA7060AP
Q13 2SC3326N
REG +12V
Q14 2SC2712
Q15 2SC2712
Q16 2SC2712
REG +12V
IC6 BX388L
Q17 2SC2712
Q18 2SC403SP
TP10
TP9
TP11
TP14
TP15
TP16
E4
NOISE CANCEL
NM
RV4:NOISE CANCELLER
RV6:OA Y VIDEO OUT LEVEL
RV7:Y/C MIX
①
②
③
④
⑤
1/2 PB 12V IN
1/2 G
1/2 D
1/2 C
1/2 B
IC18 HD10116 (1/3)
Q59 2SC3326N
DL1 1-415-162-31
DL
IC18 HD10116 (2/3)
IC18 HD10116 (3/3)
+5V
Q60 2SC2712
TP30
IC19 CX134A (2/2)
RF AMP
DROP OUT DET
LIMITER
LIMITER
RF AMP
FL5 1-231-581-21
HPF
Q61 2SC2223
Q62 2SC2223
Q63 2SC2223
TP31
RV16:CARRIER BALANCE
RV17:PB Y RF CH BALANCE/LEVEL
RV18:PB Y RF CH BALANCE
RV19:PB CHROMA RF CH BAL
⑦
⑩
⑪


Q13 2SC3326N
Q14 2SC2712
Q15 2SC2712
Q16 2SC2712
REG +12V
IC6 BX388L
Q17 2SC2712
Q18 2SC403SP
Q19 2SC2712
Q20 2SA1162
Q21 2SC2712
REG 12V
TP9
TP10
TP11
TP14
TP15
TP16
TP17
E4
E5
CANCELLER
RV6:OA Y VIDEO OUT LEVEL
RV7:Y/C MIX
W2
DUB Y OUT (X) 182-1 CN1024
DUB Y OUT (G) 182-2 CN1024
REC 688KHz CHROMA IN (X) 114-6 CO. 134-7
REC 688KHz CHROMA IN (G) 114-5 CO. 134-8
REC 688KHz CHROMA OUT (X) 153-1 RP. 123-6
REC 688KHz CHROMA OUT (G) 153-2 RP. 123-5
VIDEO LINE (1) OUT (G) 1003
VIDEO LINE (1) OUT (X) 1003
CN1003 VIDEO OUT-1
VIDEO LINE (2) OUT (G) 1004
VIDEO LINE (2) OUT (X) 1004
CN1004 VIDEO OUT-2
8P TV VIDEO OUT (X) ② CN1002.②
RFU VIDEO OUT (X) 108-6 CN1011.⑥
RFU VIDEO OUT (G) 108-5 CN1011.⑤
8P TV VIDEO OUT (G) ⑥ CN1002.⑥
+9V
L42 100μH
PB CHROMA IN (X) 113-5 CO. 133-8
PB CHROMA IN (G) 113-4 CO. 133-9
REU +9V OUT 108-3 CN1011.②
REU GND 108-4 CN1011.①
H:G.B PULSE OUT 113-10 CO. 133-3
DUB CHROMA IN (X) 181-4 DUB
DUB CHROMA IN (G) 181-3 DUB
DUB CHROMA OUT (X) 113-7 CO. 133-6
DUB CHROMA OUT (G) 113-6 CO. 133-7
W3
DUB CHROMA OUT (X) 182-4 DUB
DUB CHROMA OUT (G) 182-3 DUB
DUB CHROMA IN (X) 114-11 CO. 134-2
DUB CHROMA IN (G) 114-10 CO. 134-3
Q66 2SC2785
AUDIO OUT (X) 106-8 AU. 205-1
AUDIO OUT (G) 106-7 AU. 205-2
AUDIO IN (X) 106-1 AU. 205-8
AUDIO IN (G) 106-2 AU. 205-7
8P AUDIO OUT (X) ① CN1002.①
8P AUDIO OUT (G) ⑤ CN1002.⑤
RFU AUDIO OUT (X) 108-2 CN1011.③
RFU AUDIO OUT (G) 108-1 CN1011.④
AUDIO MONITOR OUT (X) 1009
AUDIO MONITOR OUT (G) 1009
CN1009 AUDIO MONITOR PIN JACK
W5
TV 8P AUDIO IN (X) ⑧ CN1002.⑧
TV 8P AUDIO IN (G) ⑦ CN1002.⑦
CH-A RF IN (X) 101-6 RP. 124-1
CH-A RF IN (G) 101-5 RP. 124-2
CH-B RF IN (X) 101-2 RP. 124-5
CH-B RF IN (G) 101-3 RP. 124-4
RV20:PB RF FREQ RESPONSE (MIDDLE)
IC19 CX134A(1/2)
RF AMP
PRE AMP
FIN
IC18 HD10116 (3/3)
+5V
Q60 2SC2712
IC19 CX134A (2/2)
RF AMP
LIMITER
DROP OUT DET
TP30
FL5 1-231-581-21
HPF
Q61 2SC2223
Q62 2SC2223
Q63 2SC2223
TP31
TP34
TP35
E14
REG 12V
W6
REG 12V OUT 109-1 JIG
GND 109-5 JIG
RF SW PULSE (TRIG) 109-2 JIG
RF SW PULSE OUT (X) 114-9 CO. 134-4
RF SW PULSE IN (X) 103-4 SV. 407-9
RF SW PULSE IN (G) 103-5 SV. 407-8
RF SELECT 109-3 JIG
Y-RF OUT (X) 109-4 JIG
RV16:CARRIER BALANCE
RV17:PB Y RF CH BALANCE/LEVEL
RV18:PB Y RF CH BALANCE/LEVEL
RV19:PB CHROMA RF CH BALANCE
RV21:PB RF FREQ RESPONSE (MIDDLE)
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
V0-19A (2/2)
1-625-502-21
VO-7630

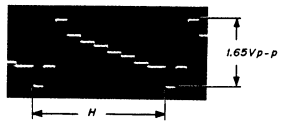
① TP9
TP10
EE



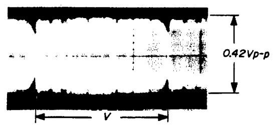
⑨ TP35
PB



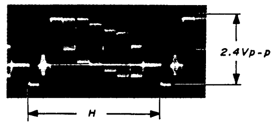
② TP11
EE



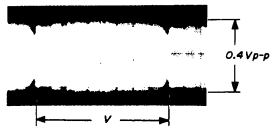
⑩ TP31
PB



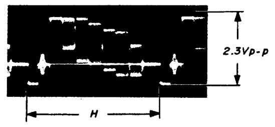
③ IC6
⑧Pin
EE



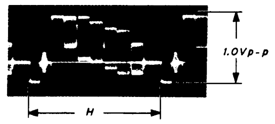
⑪ TP30
PB



④ TP14
TP15
EE

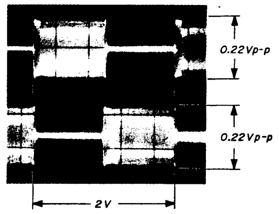


⑤ TP16
EE

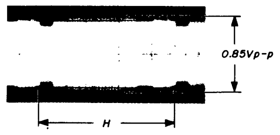


⑥ IC19
⑳Pin
PB

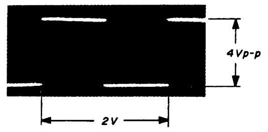
㉑Pin
PB



⑦ RV18
RV19
CENTER
PB

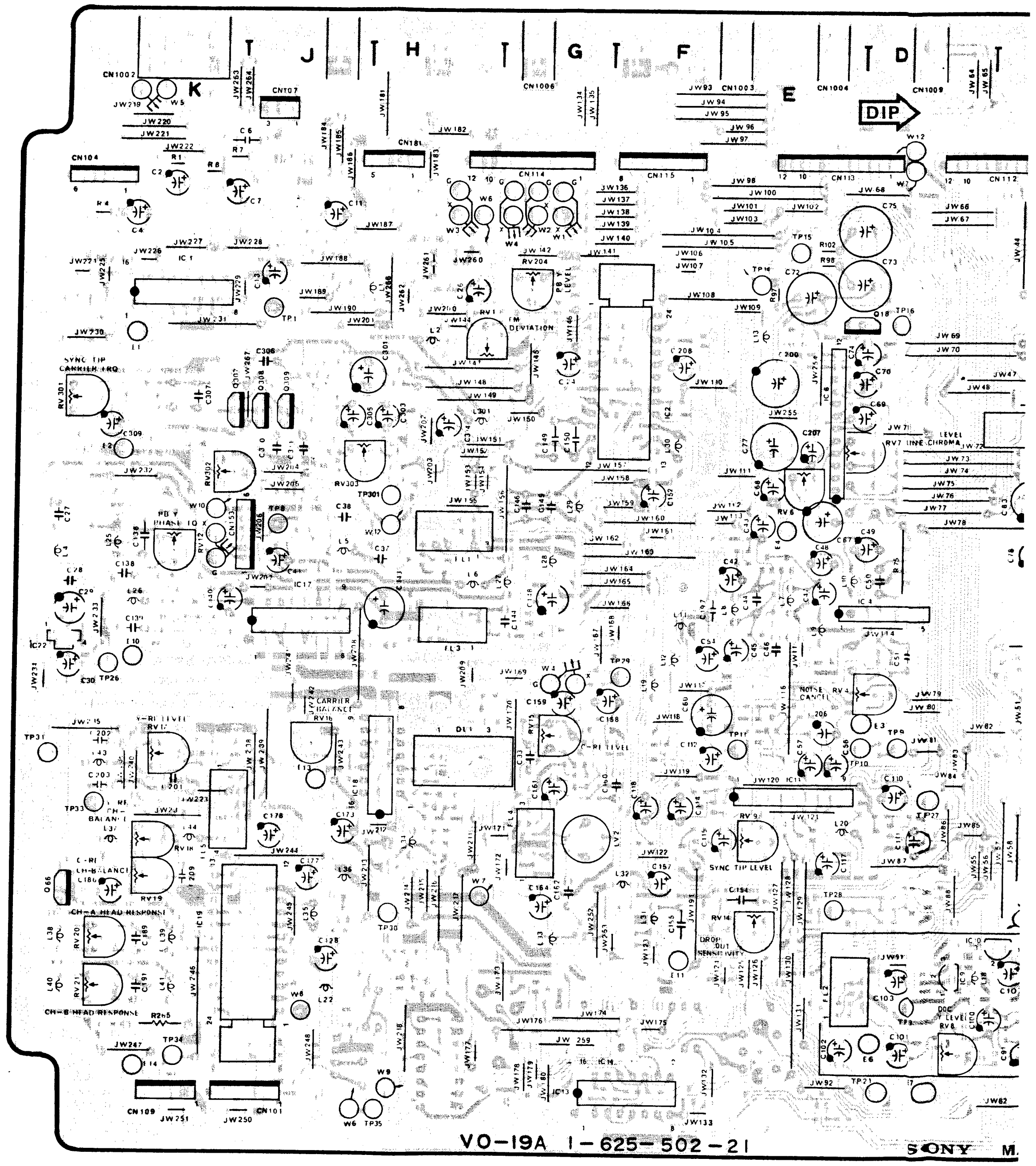


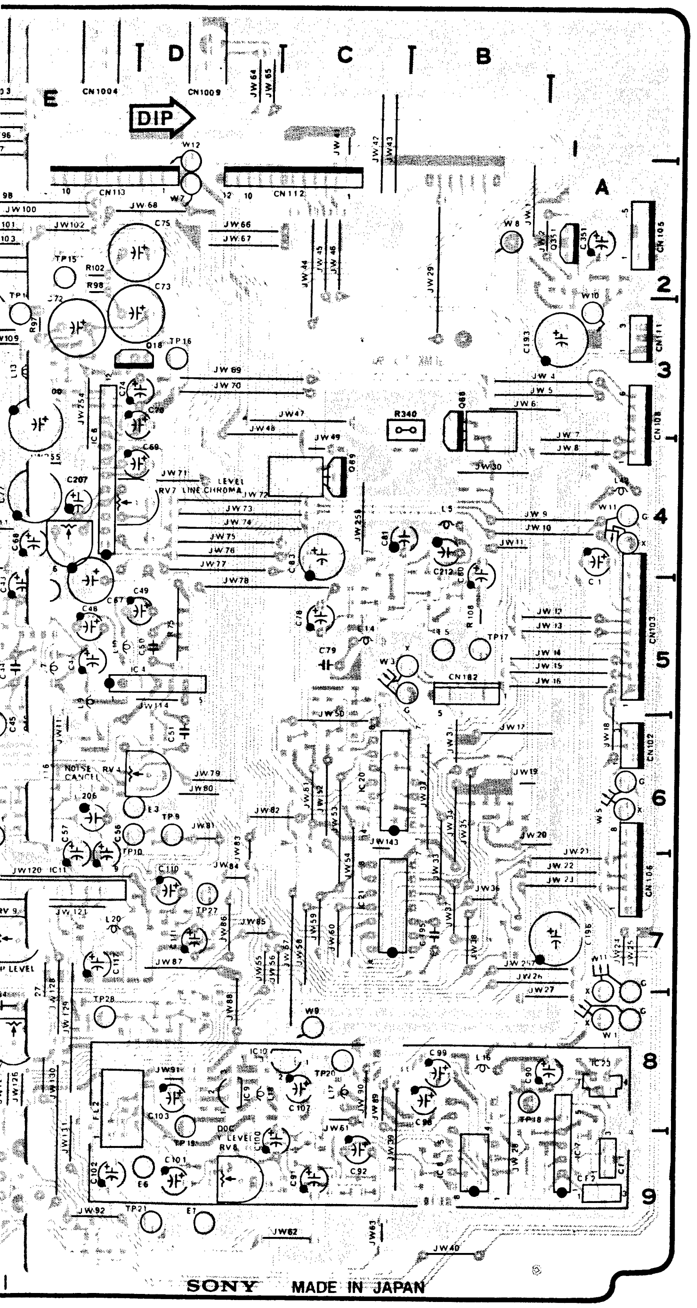
⑧ TP34
PB



VO-19A (1-625-502-21) C

CN101	J-9
CN102	A-6
CN103	A-5
CN104	L-2
CN105	A-2
CN106	A-7
CN107	J-1
CN108	A-3
CN109	K-9
CN111	A-3
CN112	C-2
CN113	E-2
CN114	G-2
CN115	F-2
CN153	J-5
CN181	H-2
CN182	B-5
CN1002	K-1
CN1003	F-1
CN1004	E-1
CN1006	G-1
CN1009	D-1
CF1	A-9
CF2	A-9
DL1	H-7
E1	K-3
E2	K-4
E3	D-6
E4	E-5
E5	B-5
E6	D-9
E7	D-9
E10	K-6
E11	F-8
E13	J-7
E14	K-9
FL1	H-5
FL2	D-8
FL3	H-5
FL4	G-7
FL5	K-7
1C1	K-3
1C2	F-3
1C4	D-5
IC6	E-4
IC7	A-8
IC8	B-9
IC9	D-8
IC10	C-8
IC11	E-7
IC14	F-9
IC17	J-5
IC18	H-7
IC19	J-8
IC20	C-6
IC21	C-7
IC22	K-6
IC23	A-8
LV2	G-7
Q18	E-3
Q66	K-8
Q68	B-3
Q69	C-4
Q307	K-4
Q308	J-4
Q309	J-4
Q351	A-2
RV1	H-3
RV4	D-6
RV6	E-4
RV7	E-4
RV8	D-9
RV9	E-7
RV12	K-5
RV13	K-6
RV14	E-8
RV15	G-6
RV16	J-6
RV17	K-7
RV18	K-7
RV19	K-7
RV20	K-8
RV21	K-8
RV204	G-3
RV301	K-4
RV302	K-4
RV303	J-4
TP1	J-3
TP8	J-5
TP9	D-6
TP10	D-6
TP11	E-6
TP14	E-3
TP15	E-2
TP16	D-3
TP17	B-5
TP18	B-8
TP19	D-9
TP20	C-8
TP21	D-9
TP26	K-6
TP27	D-7
TP28	E-8
TP29	F-6
TP30	H-8
TP31	K-7
TP33	K-7
TP34	K-9
TP35	H-9
TP301	H-4


J
H
G
F
E
D
K
DIP
CN1002
CN107
CN1006
CN1003
CN1004
CN1009
CN104
CN114
CN115
CN113
CN112
CN109
CN101
SYNC TIP CARRIER FREQ
CARRIER BALANCE
SYNC TIP LEVEL
LEVEL
CHROMA
NOISE CANCEL
CH-A HEAD RESPONSE
CH-B HEAD RESPONSE
DEVIATION
VO-19A 1-625-502-21
SONY


DIP
A
B
C
D
E
CN1004
CN1009
CN113
CN112
CN105
CN111
CN108
CN103
CN102
CN106
CN182
RV7 LINE CHROMA LEVEL
NOISE CANCEL
DOC LEVEL
1
2
3
4
5
6
7
8
9
SONY MADE IN JAPAN

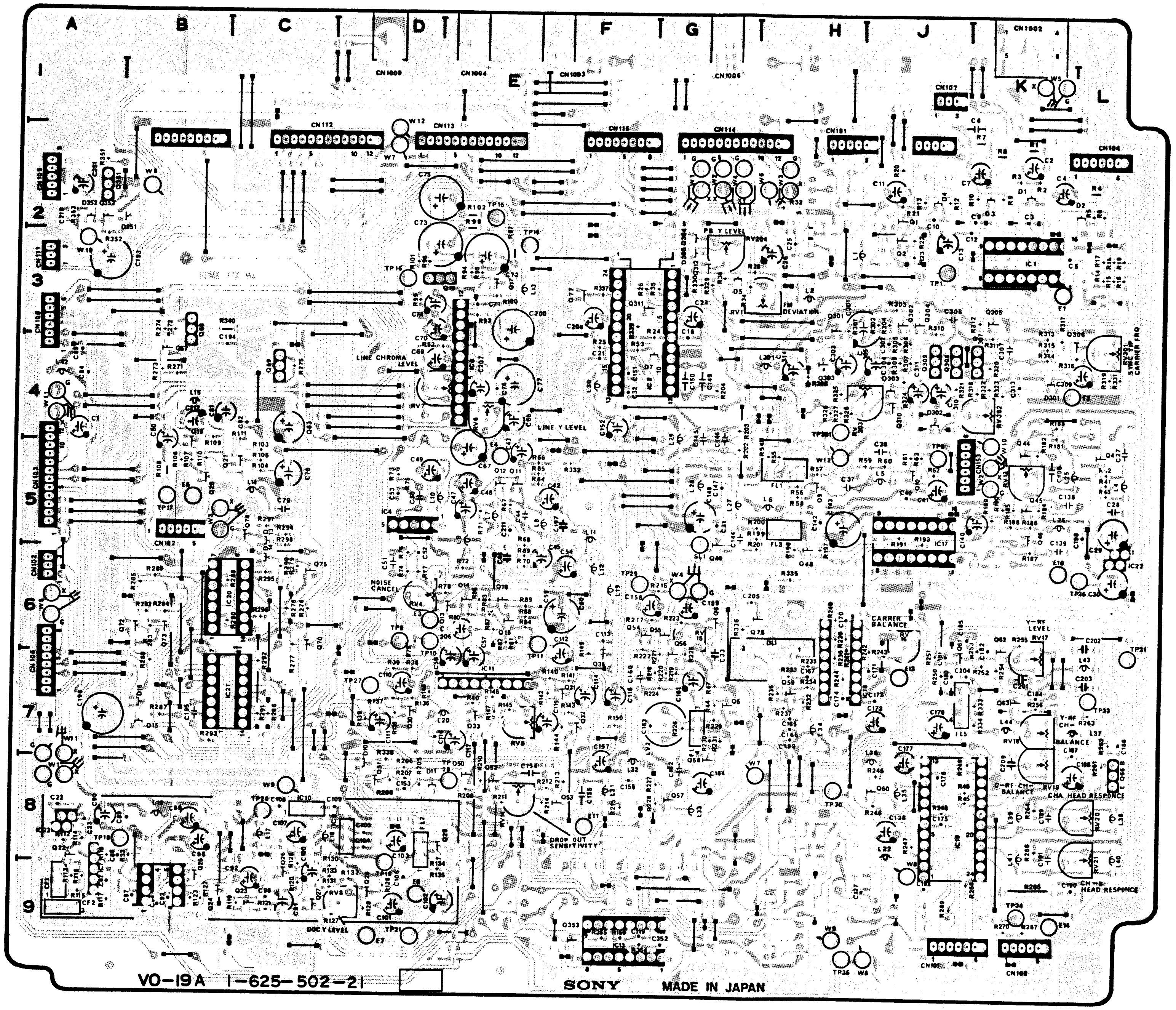
VO-19A

-COMPONENT SIDE-

1-625-502-21
VO-7630

VO-19A (1-625-502-21) S

CN101	J-9
CN102	A-6
CN103	A-5
CN104	K-2
CN105	A-2
CN106	A-7
CN107	J-1
CN108	A-3
CN109	K-9
CN111	A-3
CN112	C-2
CN113	E-2
CN114	G-2
CN115	F-2
CN153	J-5
CN181	H-2
CN182	B-5
CN1002	K-1
CN1003	F-1
CN1004	E-1
CN1006	G-1
CN1009	D-1
CF1	A-9
CF1	A-9
D1	K-2
D2	K-2
D3	K-2
D4	J-2
D5	G-3
D7	F-4
D10	D-8
D11	D-8
D13	C-5
D14	C-6
D15	B-7
D16	B-7
D301	K-4
D302	J-4
D303	J-4
D304	G-3
D305	G-3
D351	A-2
D352	A-2
DL1	H-7
E1	K-3
E2	K-4
E3	D-6
E4	E-5
E5	B-5
E6	D-9
E7	D-9
E10	K-6
E11	F-8
E13	J-7
E14	K-9
FL1	H-5
FL2	D-8
FL3	H-5
FL4	G-7
FL5	K-7
IC1	K-3
IC2	F-3
IC4	D-5
IC6	E-4
IC7	A-8
IC8	B-9
IC9	B-8
IC10	C-8
IC11	E-7
IC13	F-9
IC17	J-5
IC18	H-7
IC19	J-8
IC20	C-6
IC21	C-7
IC22	L-6
IC23	A-8
LV2	G-7
Q1	J-2
Q2	J-3
Q4	L-5
Q5	G-7
Q6	G-6
Q9	H-5
Q10	J-5
Q11	E-5
Q12	E-5
Q13	E-6
Q14	E-6
Q15	E-6
Q16	E-6
Q17	E-3
Q18	E-3
Q19	B-5
Q20	B-5
Q21	C-5
Q22	A-8
Q23	C-9
Q24	B-9
Q25	B-9
Q26	C-9
Q27	C-9
Q28	D-9
Q29	E-8
Q30	D-7
Q31	F-7
Q32	F-7
Q33	E-7
Q34	F-6
Q40	K-5
Q44	K-5
Q45	K-5
Q48	H-5
Q49	G-5
Q50	E-8
Q51	D-8
Q52	E-8
Q53	F-8
Q54	F-6
Q55	G-6
Q56	G-6
Q57	G-8
Q58	G-8
Q59	H-7
Q60	J-8
Q61	J-7
Q62	K-6
Q63	K-7
Q66	L-8
Q67	B-4
Q68	B-3
Q69	C-4
Q70	C-6
Q72	B-6
Q73	B-6
Q74	C-5
Q75	C-6
Q76	H-6
Q77	F-3
Q301	H-3
Q302	J-3
Q303	H-4
Q304	J-3
Q305	K-3
Q306	K-4
Q307	K-4
Q308	J-4
Q309	J-4
Q310	J-4
Q311	F-3
Q312	G-3
Q351	A-2
Q352	A-2
Q353	F-9
RV1	H-3
RV4	D-6
RV6	E-4
RV7	E-4
RV8	D-9
RV9	E-7
RV12	K-5
RV14	E-8
RV15	G-6
RV16	J-6
RV17	K-7
RV18	K-7
RV19	K-7
RV20	L-8
RV21	L-8
RV204	G-3
RV301	K-4
RV302	K-4
RV303	J-4
SL1	G-5
TP1	J-3
TP8	J-5
TP9	D-6
TP10	D-6
TP11	E-6
TP14	E-3
TP15	E-2
TP16	D-3
TP17	B-5
TP18	B-8
TP19	D-9
TP20	C-8
TP21	D-9
TP26	L-6
TP27	D-7
TP28	E-8
TP29	F-6
TP30	H-8
TP31	L-7
TP33	L-7
TP34	K-9
TP35	H-9
TP301	H-4

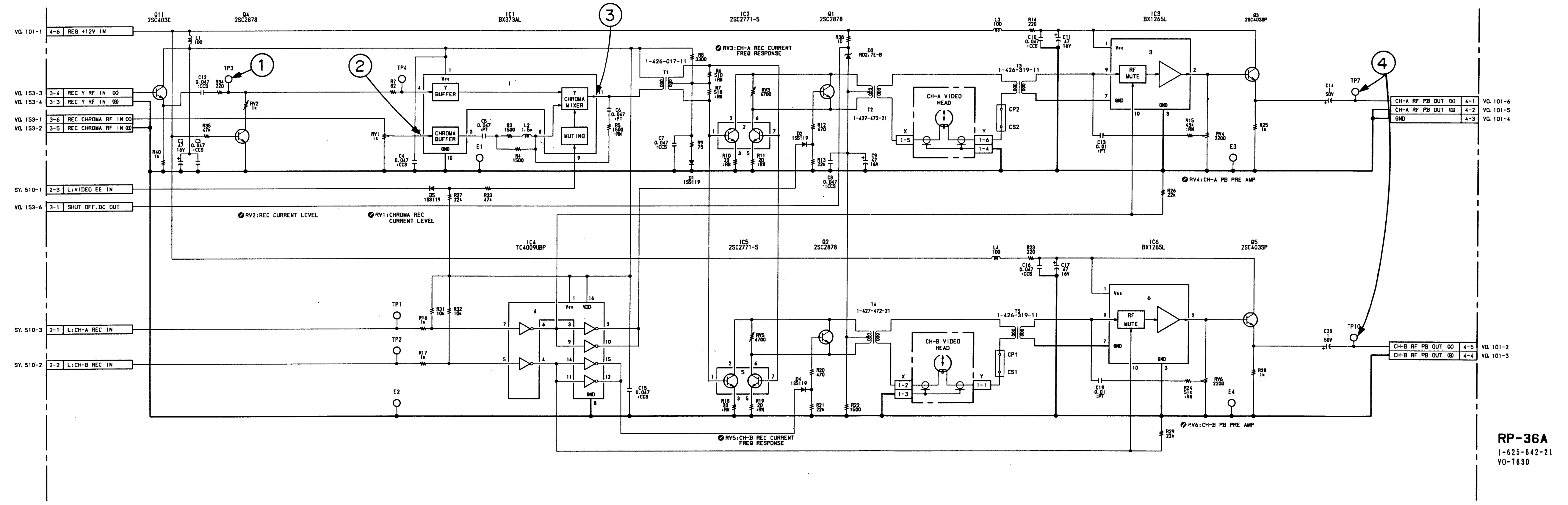

A
B
C
D
E
F
G
H
J
K
L
1
2
3
4
5
6
7
8
9
CN1009
CN1004
CN1003
CN1006
CN1002
CN112
CN113
CN115
CN114
CN181
CN107
CN104
CN182
PB Y LEVEL
FM DEVIATION
LINE CHROMA LEVEL
LINE Y LEVEL
NOISE CANCEL
CARRIER BALANCE
Y-RF LEVEL
SUB CARRIER FRQ
Y-RF CH BALANCE
C-RF CH BALANCE
CHA HEAD RESPONCE
CH-B HEAD RESPONCE
DROP OUT SENSITIVITY
DOCY LEVEL
VO-19A 1-625-502-21
SONY MADE IN JAPAN

VO-19A

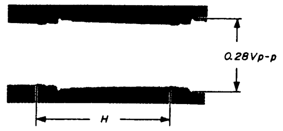
-SOLDERING SIDE-

1-625-502-21
VO-7630

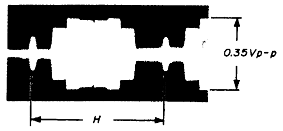
RP-36A:PB AMPLIFIER


VQ. 101-1
4-6 REG +12V IN
VQ. 153-3
3-4 REC Y RF IN (X)
VQ. 153-4
3-3 REC Y RF IN (G)
VQ. 153-1
3-6 REC CHROMA RF IN (X)
VQ. 153-2
3-5 REC CHROMA RF IN (G)
SY. 510-1
2-3 L:VIDEO EE IN
VQ. 153-6
3-1 SHUT OFF.DC OUT
SY. 510-3
2-1 L:CH-A REC IN
SY. 510-2
2-2 L:CH-B REC IN
Q11 2SC403C
Q4 2SC2878
IC1 BX373AL
IC2 2SC2771-5
Q1 2SC2878
IC3 BX1265L
Q3 2SC403SP
IC4 TC4009UBP
IC5 2SC2771-5
Q2 2SC2878
IC6 BX1265L
Q5 2SC403SP
①
②
③
④
TP1
TP2
TP3
TP4
TP7
TP10
E1
E2
E3
E4
Y BUFFER
CHROMA BUFFER
Y CHROMA MIXER
MUTING
Vcc
VDD
GND
RF MUTE
CH-A VIDEO HEAD
CH-B VIDEO HEAD
CP1
CS1
CP2
CS2
T1 1-426-017-11
T2 1-427-472-21
T3 1-426-319-11
T4 1-427-472-21
T5 1-426-319-11
D1 1SS119
D2 1SS119
D3 RD2.7E-B
D4 1SS119
D5 1SS119
RV1 1k
RV2 1k
RV3 4700
RV4 2200
RV5 4700
RV6 2200
⊘RV2:REC CURRENT LEVEL
⊘RV1:CHROMA REC CURRENT LEVEL
⊘RV3:CH-A REC CURRENT FREQ RESPONSE
⊘RV4:CH-A PB PRE AMP
⊘RV5:CH-B REC CURRENT FREQ RESPONSE
⊘RV6:CH-B PB PRE AMP
C14 1 50V
C20 1 50V
CH-A RF PB OUT (X) 4-1 VQ. 101-6
CH-A RF PB OUT (G) 4-2 VQ. 101-5
GND 4-3 VQ. 101-4
CH-B RF PB OUT (X) 4-5 VQ. 101-2
CH-B RF PB OUT (G) 4-4 VQ. 101-3
RP-36A
1-625-642-21
VO-7630

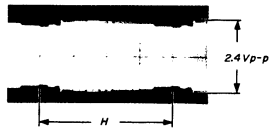
① TP3
REC



② IC1
②Pin
REC

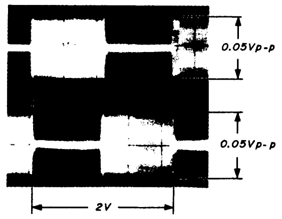


③ IC1
⑪Pin
REC



④ TP7
PB

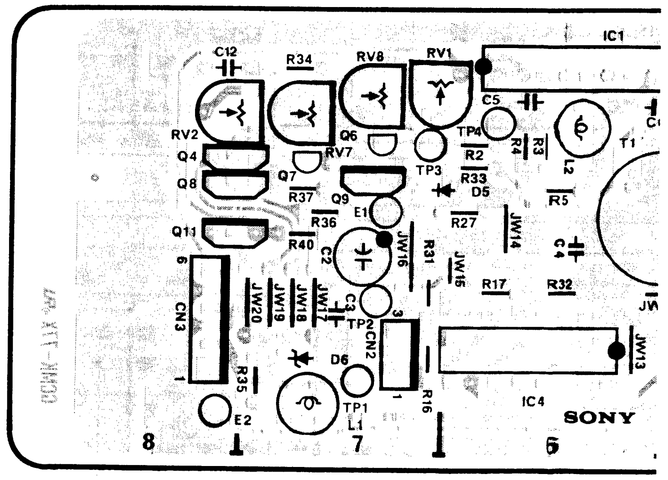
TP10
PB

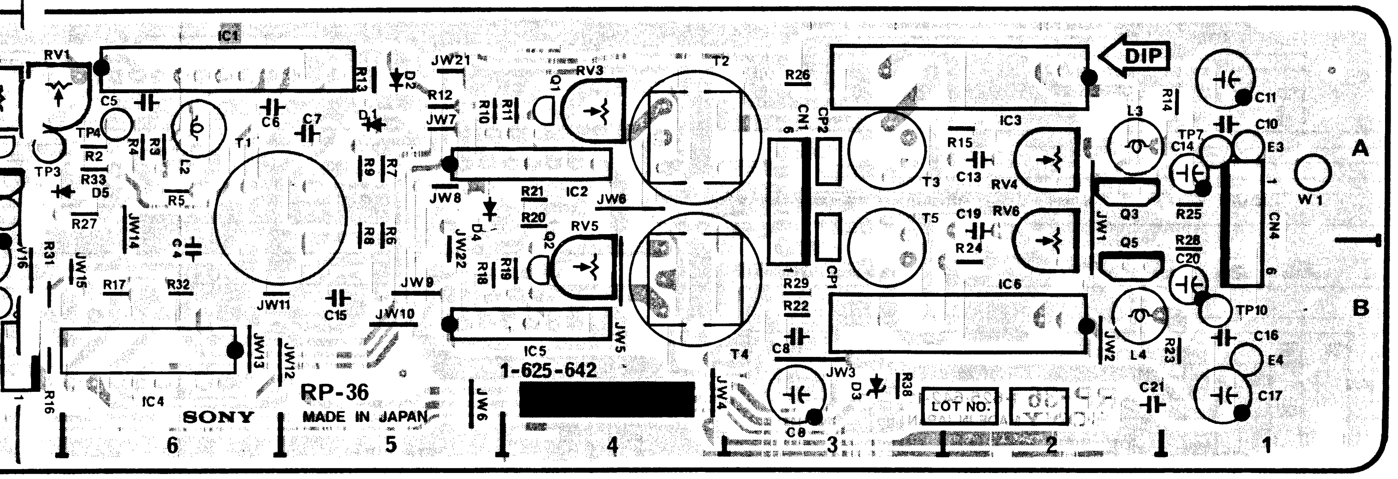


RP-36A:PB AMPLIFIER

RP-36A (1-625-642-21)

CN1	A-3	T1	A-6
CN2	B-7	T2	A-4
CN3	B-8	T3	A-3
CN4	A-1	T4	B-4
		T5	B-3
CP1	A-3		
CP2	A-3	TP1	B-7
		TP2	B-7
D1	A-5	TP3	A-7
D2	A-5	TP4	A-6
D3	B-3	TP7	A-1
D4	A-5	TP10	B-1
D5	A-6		
D6	B-7		
E1	A-7		
E2	B-8		
E3	A-1		
E4	B-1		
IC1	A-6		
IC2	A-4		
IC3	A-2		
IC4	B-6		
IC5	B-4		
IC6	B-2		
Q1	A-4		
Q2	B-4		
Q3	A-2		
Q4	A-8		
Q5	B-2		
Q6	A-7		
Q7	A-7		
Q8	A-8		
Q9	A-7		
Q11	A-8		
RV1	A-7		
RV2	A-8		
RV3	A-4		
RV4	A-2		
RV5	B-4		
RV6	A-2		
RV7	A-7		
RV8	A-7		


IC1
C12
R34
RV8
RV1
C5
RV2
Q6
TP4
R4
R3
T1
Q4
RV7
R2
L2
Q8
Q7
TP3
R33
D5
R37
Q9
R5
E1
R36
R27
Q11
R40
C2
JW16
R31
JW14
C4
6
JW15
R17
R32
CN3
JW20
JW19
JW18
JW17
C3
TP2
3
CN2
JW13
D6
R35
1
TP1
R16
IC4
E2
L1
SONY
8
7
6

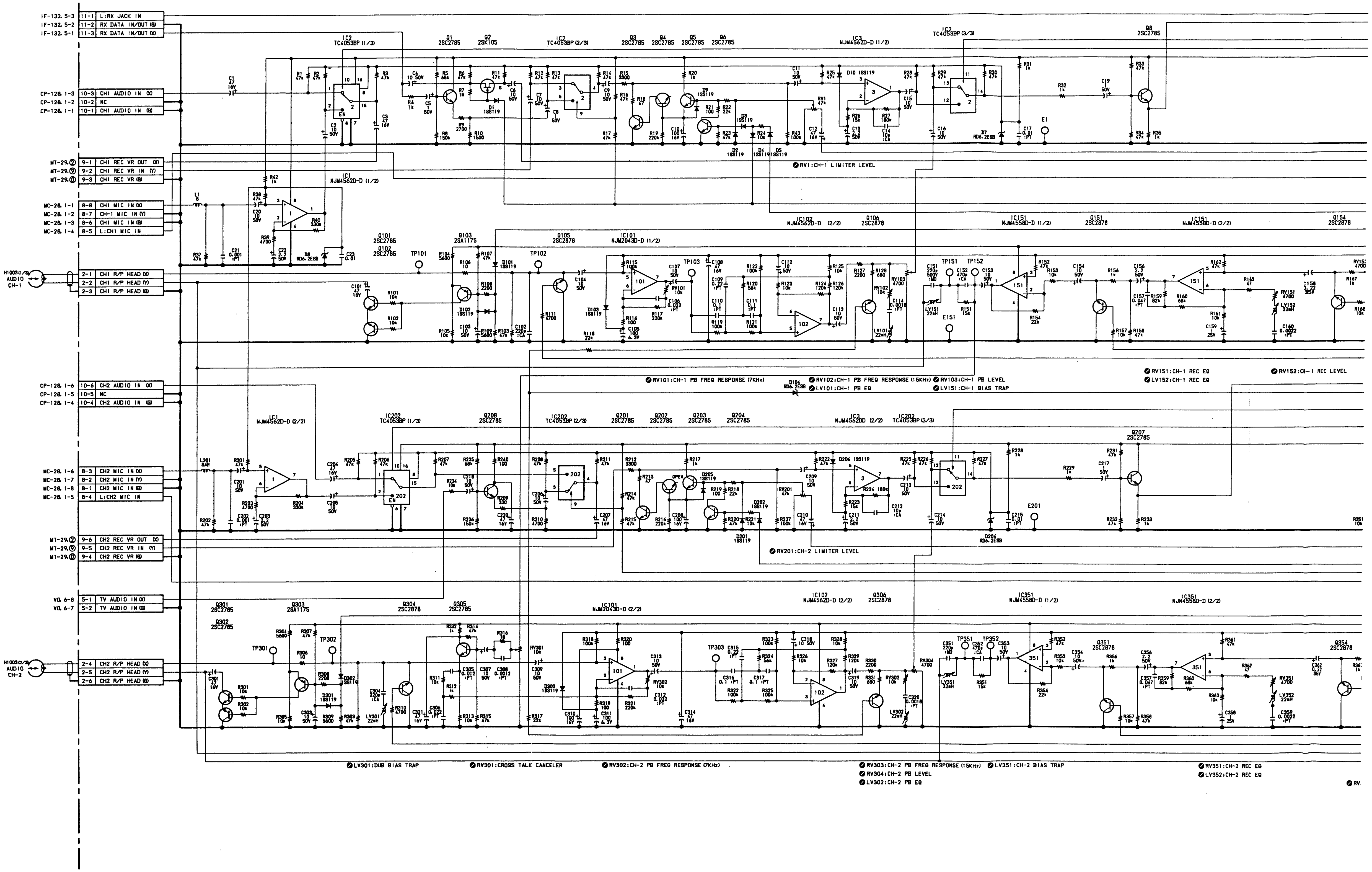

RV1
IC1
R13
D2
JW21
RV3
T2
R26
CN1
CP2
DIP
R14
C11
C10
L3
C14
TP7
E3
A
W1
C5
TP4
R2
R4
R3
L2
C6
C7
D1
R12
JW7
R10
R11
Q1
IC3
R15
C13
T3
RV4
Q3
TP3
R33
D5
R5
T1
R9
R7
JW8
R21
IC2
JW6
R25
CN4
R27
JW14
C4
R8
R6
D4
R20
RV5
T5
C19
RV6
JW1
R28
Q5
C20
R31
JW15
R17
R32
JW11
C15
JW9
JW10
JW22
R18
R19
Q2
R24
IC6
R29
R22
CP1
TP10
B
L4
JW13
JW12
IC5
JW5
T4
C8
JW2
R23
C16
E4
1-625-642
JW3
D3
R38
C21
C17
R16
IC4
RP-36
SONY
MADE IN JAPAN
JW6
JW4
C9
LOT NO.
6
5
4
3
2
1

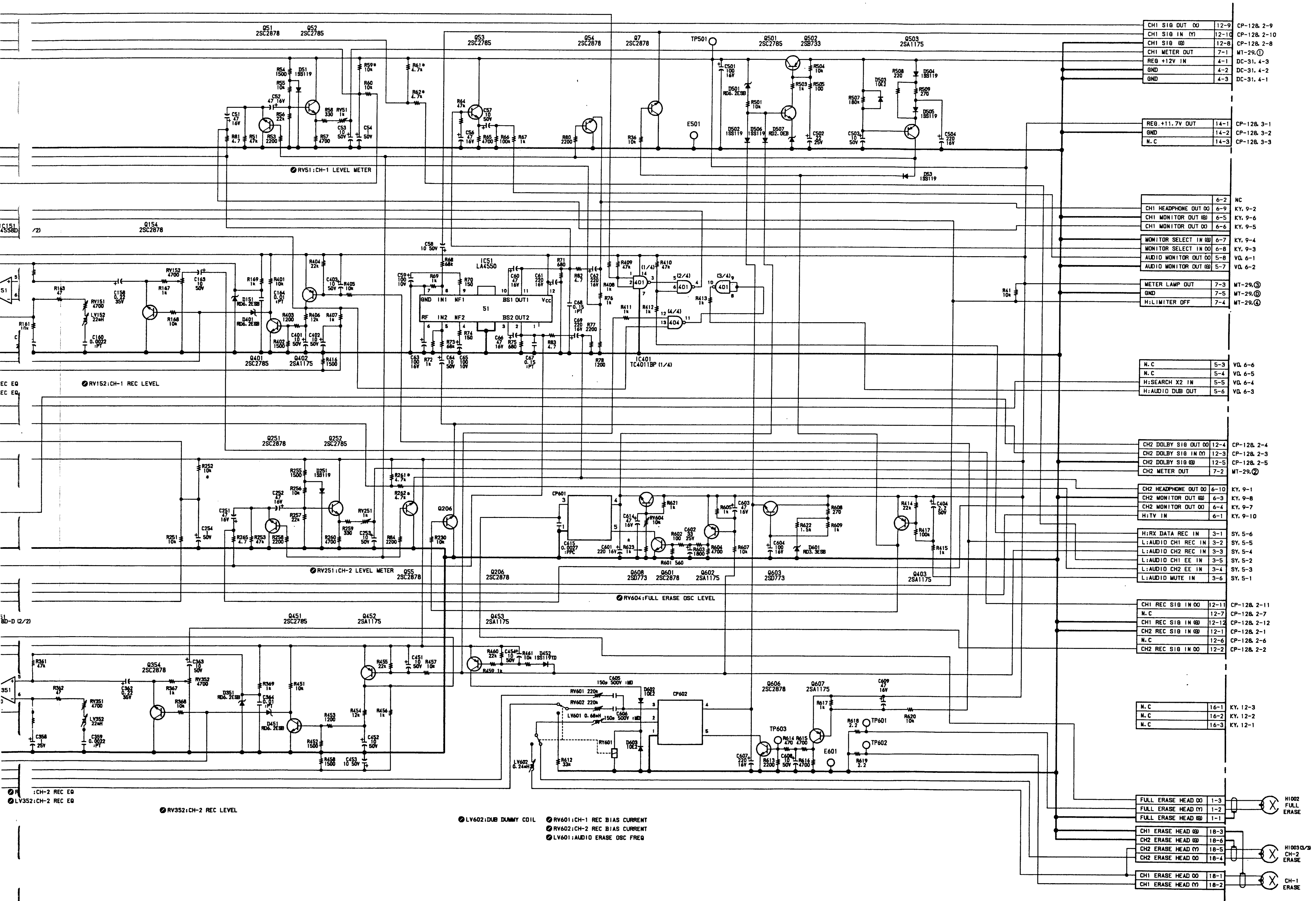
RP-36A

-COMPONENT SIDE-

1-625-642-21
VO-7630

AU-82B: PB AMPLIFIER


IF-132 5-3 11-1 L:RX JACK IN
IF-132 5-2 11-2 RX DATA IN/OUT (G)
IF-132 5-1 11-3 RX DATA IN/OUT (O)
CP-128 1-3 10-3 CH1 AUDIO IN (O)
CP-128 1-2 10-2 NC
CP-128 1-1 10-1 CH1 AUDIO IN (G)
MT-29 ② 9-1 CH1 REC VR OUT (O)
MT-29 ⑤ 9-2 CH1 REC VR IN (Y)
MT-29 ⓖ 9-3 CH1 REC VR (G)
MC-28 1-1 8-8 CH1 MIC IN (O)
MC-28 1-2 8-7 CH-1 MIC IN (Y)
MC-28 1-3 8-6 CH1 MIC IN (G)
MC-28 1-4 8-5 L:CH1 MIC IN
H1003(1/3) AUDIO CH-1
2-1 CH1 R/P HEAD (O)
2-2 CH1 R/P HEAD (Y)
2-3 CH1 R/P HEAD (G)
CP-128 1-6 10-6 CH2 AUDIO IN (O)
CP-128 1-5 10-5 NC
CP-128 1-4 10-4 CH2 AUDIO IN (G)
MC-28 1-6 8-3 CH2 MIC IN (O)
MC-28 1-7 8-2 CH2 MIC IN (Y)
MC-28 1-8 8-1 CH2 MIC IN (G)
MC-28 1-5 8-4 L:CH2 MIC IN
MT-29 ② 9-6 CH2 REC VR OUT (O)
MT-29 ⑤ 9-5 CH2 REC VR IN (Y)
MT-29 ⓖ 9-4 CH2 REC VR (G)
VO 6-8 5-1 TV AUDIO IN (O)
VO 6-7 5-2 TV AUDIO IN (G)
H1003(2/3) AUDIO CH-2
2-4 CH2 R/P HEAD (O)
2-5 CH2 R/P HEAD (Y)
2-6 CH2 R/P HEAD (G)
IC2 TC4053BP (1/3)
Q1 2SC2785
Q2 2SK105
IC2 TC4053BP (2/3)
Q3 2SC2785
Q4 2SC2785
Q5 2SC2785
Q6 2SC2785
IC3 NJM4562D-D (1/2)
IC2 TC4053BP (3/3)
Q8 2SC2785
IC1 NJM4562D-D (1/2)
Q101 2SC2785
Q102 2SC2785
Q103 2SA1175
Q105 2SC2878
IC101 NJM2043D-D (1/2)
IC102 NJM4562D-D (2/2)
Q106 2SC2878
IC151 NJM4558D-D (1/2)
Q151 2SC2878
IC151 NJM4558D-D (2/2)
Q154 2SC2878
TP101
TP102
TP103
TP151
TP152
E1
E151
E201
IC1 NJM4562D-D (2/2)
IC202 TC4053BP (1/3)
Q208 2SC2785
IC202 TC4053BP (2/3)
Q201 2SC2785
Q202 2SC2785
Q203 2SC2785
Q204 2SC2785
IC3 NJM4562DD (2/2)
IC202 TC4053BP (3/3)
Q207 2SC2785
Q301 2SC2785
Q302 2SC2785
Q303 2SA1175
Q304 2SC2878
Q305 2SC2785
IC101 NJM2043D-D (2/2)
IC102 NJM4562D-D (2/2)
Q306 2SC2878
IC351 NJM4558D-D (1/2)
Q351 2SC2878
IC351 NJM4558D-D (2/2)
Q354 2SC2878
TP301
TP302
TP303
TP351
TP352
RV1:CH-1 LIMITER LEVEL
RV101:CH-1 PB FREQ RESPONSE (7KHz)
RV102:CH-1 PB FREQ RESPONSE (15KHz)
RV103:CH-1 PB LEVEL
LV101:CH-1 PB EQ
LV151:CH-1 BIAS TRAP
RV151:CH-1 REC EQ
LV152:CH-1 REC EQ
RV152:CH-1 REC LEVEL
RV201:CH-2 LIMITER LEVEL
LV301:DUB BIAS TRAP
RV301:CROSS TALK CANCELER
RV302:CH-2 PB FREQ RESPONSE (7KHz)
RV303:CH-2 PB FREQ RESPONSE (15KHz)
RV304:CH-2 PB LEVEL
LV302:CH-2 PB EQ
LV351:CH-2 BIAS TRAP
RV351:CH-2 REC EQ
LV352:CH-2 REC EQ

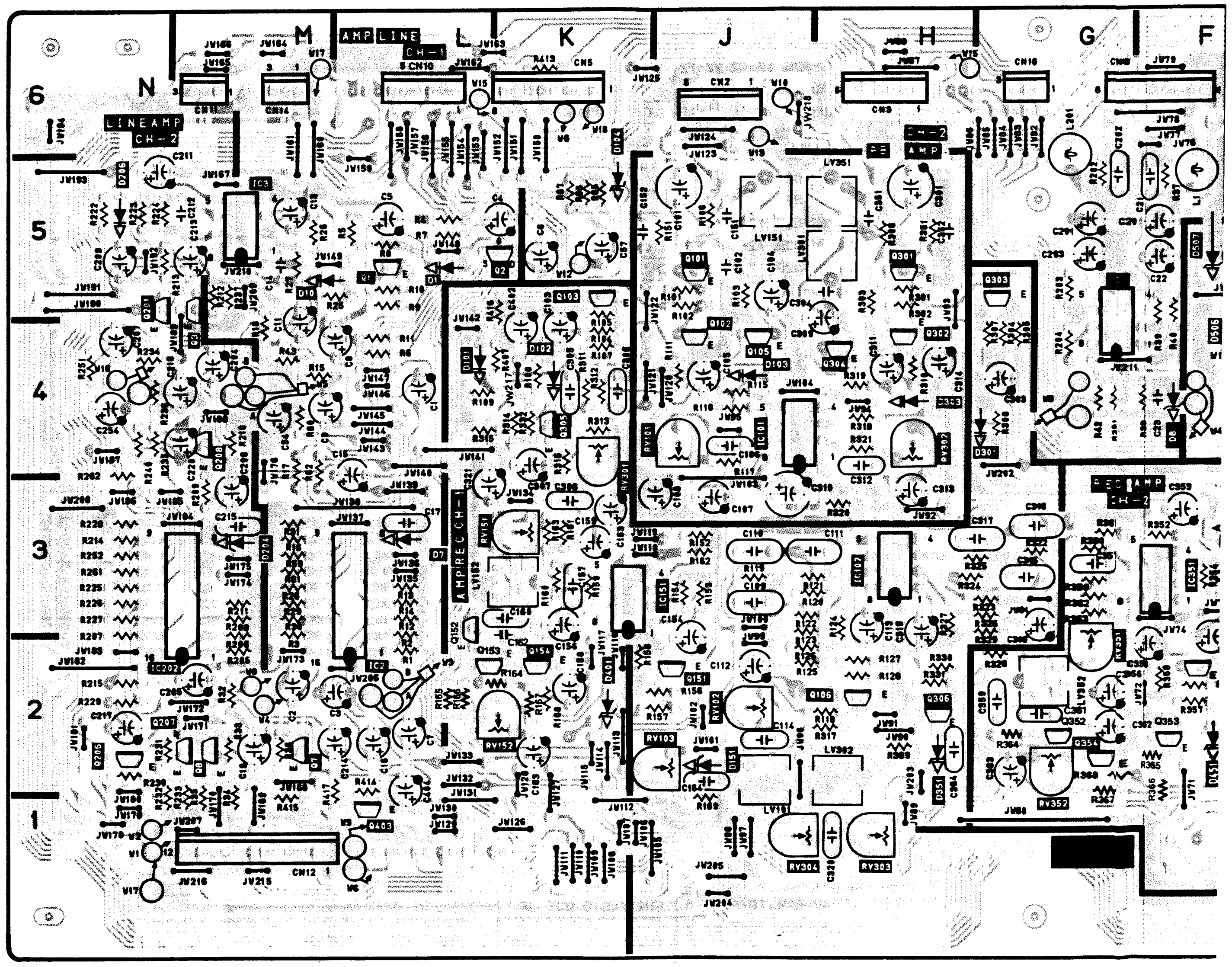

Q51 2SC2878
Q52 2SC2785
Q53 2SC2785
Q54 2SC2878
Q7 2SC2878
TP501
Q501 2SC2785
Q502 2SB733
Q503 2SA1175
E501
D53 1SS119
RV51:CH-1 LEVEL METER
Q154 2SC2878
IC51 LA4550
IC401 TC4011BP (1/4)
Q401 2SC2785
Q402 2SA1175
RV152:CH-1 REC LEVEL
Q251 2SC2878
Q252 2SC2785
Q206
CP601
RV251:CH-2 LEVEL METER
Q55 2SC2878
Q206 2SC2878
Q608 2SD773
Q601 2SC2878
Q602 2SA1175
Q603 2SD773
Q403 2SA1175
RV604:FULL ERASE OSC LEVEL
Q451 2SC2785
Q452 2SA1175
Q453 2SA1175
Q354 2SC2878
CP602
Q606 2SC2878
Q607 2SA1175
TP601
TP602
TP603
E601
RV352:CH-2 REC LEVEL
LV352:CH-2 REC EQ
:CH-2 REC EQ
LV602:DUB DUMMY COIL
RV601:CH-1 REC BIAS CURRENT
RV602:CH-2 REC BIAS CURRENT
LV601:AUDIO ERASE OSC FREQ
CH1 SIG OUT (X) 12-9 CP-128, 2-9
CH1 SIG IN (Y) 12-10 CP-128, 2-10
CH1 SIG (G) 12-8 CP-128, 2-8
CH1 METER OUT 7-1 MT-29,①
REG +12V IN 4-1 DC-31, 4-3
GND 4-2 DC-31, 4-2
GND 4-3 DC-31, 4-1
REG.+11.7V OUT 14-1 CP-128, 3-1
GND 14-2 CP-128, 3-2
N.C 14-3 CP-128, 3-3
6-2 NC
CH1 HEADPHONE OUT (X) 6-9 KY, 9-2
CH1 MONITOR OUT (G) 6-5 KY, 9-6
CH1 MONITOR OUT (X) 6-6 KY, 9-5
MONITOR SELECT IN (G) 6-7 KY, 9-4
MONITOR SELECT IN (X) 6-8 KY, 9-3
AUDIO MONITOR OUT (X) 5-8 VO, 6-1
AUDIO MONITOR OUT (G) 5-7 VO, 6-2
METER LAMP OUT 7-3 MT-29,③
GND 7-5 MT-29,⓪
H:LIMITER OFF 7-4 MT-29,④
N.C 5-3 VO, 6-6
N.C 5-4 VO, 6-5
H:SEARCH X2 IN 5-5 VO, 6-4
H:AUDIO DUB OUT 5-6 VO, 6-3
CH2 DOLBY SIG OUT (X) 12-4 CP-128, 2-4
CH2 DOLBY SIG IN (Y) 12-3 CP-128, 2-3
CH2 DOLBY SIG (G) 12-5 CP-128, 2-5
CH2 METER OUT 7-2 MT-29,②
CH2 HEADPHONE OUT (X) 6-10 KY, 9-1
CH2 MONITOR OUT (G) 6-3 KY, 9-8
CH2 MONITOR OUT (X) 6-4 KY, 9-7
H:TV IN 6-1 KY, 9-10
H:RX DATA REC IN 3-1 SY, 5-6
L:AUDIO CH1 REC IN 3-2 SY, 5-5
L:AUDIO CH2 REC IN 3-3 SY, 5-4
L:AUDIO CH1 EE IN 3-5 SY, 5-2
L:AUDIO CH2 EE IN 3-4 SY, 5-3
L:AUDIO MUTE IN 3-6 SY, 5-1
CH1 REC SIG IN (X) 12-11 CP-128, 2-11
N.C 12-7 CP-128, 2-7
CH1 REC SIG IN (G) 12-12 CP-128, 2-12
CH2 REC SIG IN (G) 12-1 CP-128, 2-1
N.C 12-6 CP-128, 2-6
CH2 REC SIG IN (X) 12-2 CP-128, 2-2
N.C 16-1 KY, 12-3
N.C 16-2 KY, 12-2
N.C 16-3 KY, 12-1
FULL ERASE HEAD (X) 1-3
FULL ERASE HEAD (Y) 1-2
FULL ERASE HEAD (G) 1-1
CH1 ERASE HEAD (G) 18-3
CH2 ERASE HEAD (G) 18-6
CH2 ERASE HEAD (Y) 18-5
CH2 ERASE HEAD (X) 18-4
CH1 ERASE HEAD (X) 18-1
CH1 ERASE HEAD (Y) 18-2
H1002 FULL ERASE
H1003(3/3) CH-2 ERASE
CH-1 ERASE

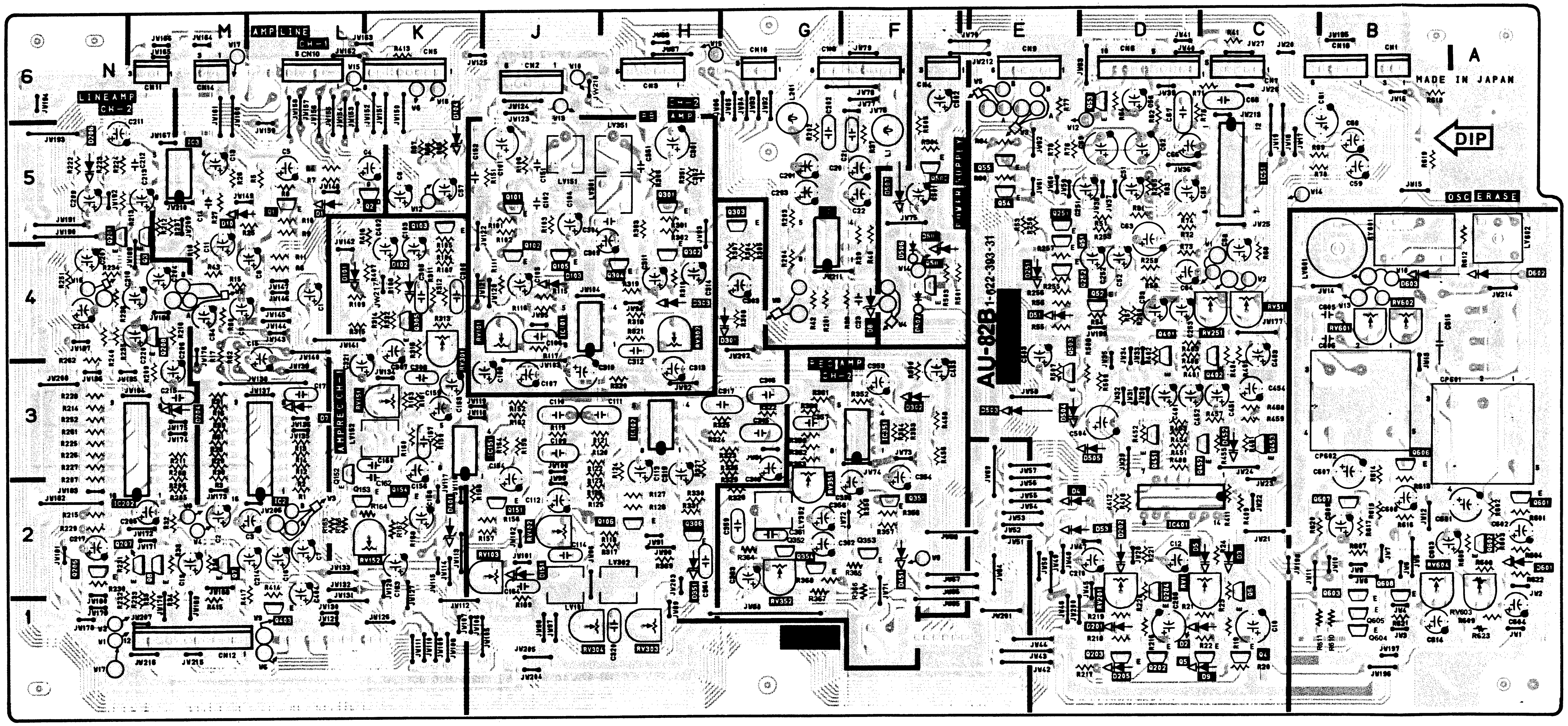
AU-82B
1-622-393-31
VO-7600
VO-7630

AU-82B: PB AMPLIFIER

AU-82B (1-622-393-31)

CN1	B-6
CN2	J-6
CN3	H-6
CN4	F-6
CN5	K-6
CN6	D-6
CN7	C-6
CN8	F-6
CN9	E-6
CN10	L-6
CN11	M-6
CN12	M-1
CN14	M-6
CN16	G-6
CN18	B-6
CP601	A-3
CP602	B-3
D1	L-5
D2	C-1
D3	C-2
D4	D-2
D5	C-2
D7	L-3
D8	F-4
D9	C-1
D10	M-5
D51	E-4
D53	D-2
D101	L-4
D102	K-4
D103	J-4
D104	K-5
D151	J-2
D201	D-1
D202	D-2
D204	M-3
D205	D-1
D206	N-5
D251	E-4
D301	G-4
D302	F-3
D303	H-4
D351	H-2
D401	K-2
D451	F-2
D452	C-3
D502	F-4
D503	E-3
D504	E-3
D505	D-3
D506	F-4
D507	F-5
D511	F-4
D601	A-2
D602	A-4
D603	B-4
IC1	G-5
IC2	L-3
IC3	M-5
IC51	C-5
IC101	J-4
IC102	H-3
IC151	K-3
IC202	M-3
IC351	F-3
iC401	D-2
LV101	J-2
LV151	J-5
LV152	K-3
LV301	H-5
LV302	H-2
LV351	H-5
LV352	G-2
LV601	B-4
LV602	A-4
Q1	L-5
Q2	L-5
Q3	M-5
Q4	C-1
Q5	C-1
Q6	C-2
Q7	M-2
Q8	M-2
Q34	E-5
Q51	E-4
Q52	D-4
Q53	D-6
Q54	E-5
Q55	E-5
Q101	J-5
Q102	J-4
Q103	K-5
Q105	J-4
Q106	H-2
Q151	J-2
Q152	L-3
Q153	L-2
Q154	K-2
Q201	N-5
Q202	D-1
Q203	D-1
Q204	D-2
Q206	F-4
Q207	M-2
Q208	M-4
Q251	E-5
Q252	E-4
Q301	H-5
Q302	H-4
Q303	G-5
Q304	H-4
Q305	K-4
Q306	H-2
Q351	F-2
Q352	G-2
Q353	F-2
Q354	G-2
Q401	D-4
Q402	C-4
Q403	L-1
Q451	D-3
Q452	C-3
Q453	C-3
Q502	F-5
Q503	E-3
Q511	E-4
Q601	B-4
Q602	B-4
Q603	A-2
Q604	B-1
Q605	B-1
Q606	B-3
Q607	B-2
Q608	B-2
RV1	C-2
RV51	C-4
RV101	J-4
RV102	J-2
RV103	J-2
RV151	K-3
RV152	K-2
RV201	D-2
RV251	C-4
RV301	K-4
RV302	H-4
RV303	H-1
RV304	J-1
RV351	G-2
RV352	G-2
RV601	B-4
RV602	B-4
RV603	A-1
RV604	B-2
RY601	B-5





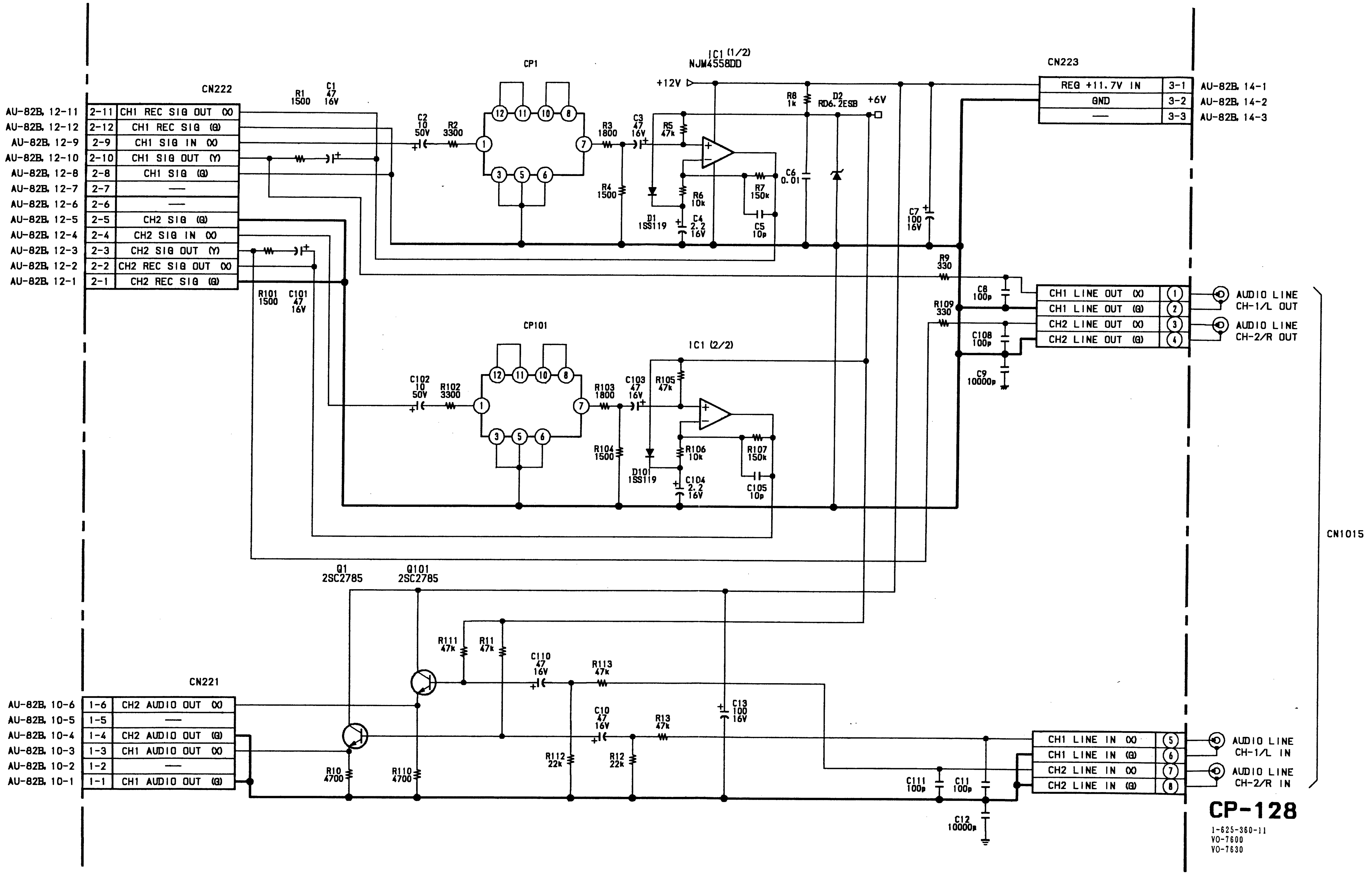
AU-82B 1-622-393-31
MADE IN JAPAN
DIP
N
M
L
K
J
H
G
F
E
D
C
B
A
6
5
4
3
2
1
LINE AMP CH-2
AMP LINE CH-1
AMP REC CH-1
REC AMP CH-2
OSC ERASE

AU-82B

-COMPONENT SIDE-

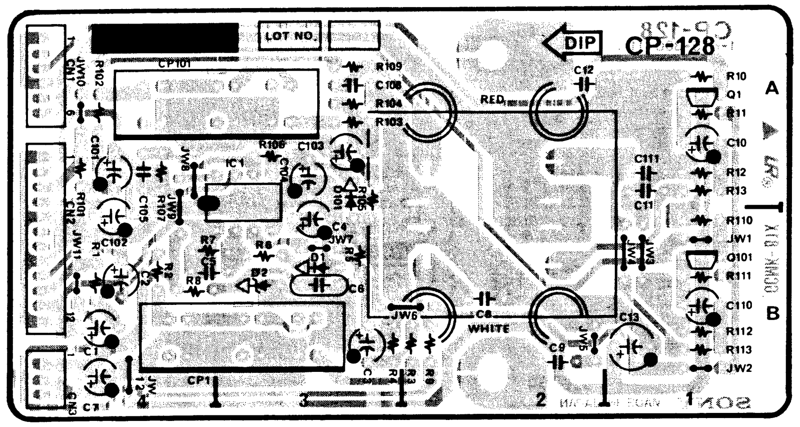
1-622-393-31
VO-7600
VO-7630

CP-128:OUTPUT AMPLIFIER


CN222
AU-82B, 12-11
AU-82B, 12-12
AU-82B, 12-9
AU-82B, 12-10
AU-82B, 12-8
AU-82B, 12-7
AU-82B, 12-6
AU-82B, 12-5
AU-82B, 12-4
AU-82B, 12-3
AU-82B, 12-2
AU-82B, 12-1
2-11 CH1 REC SIG OUT (X)
2-12 CH1 REC SIG (G)
2-9 CH1 SIG IN (X)
2-10 CH1 SIG OUT (Y)
2-8 CH1 SIG (G)
2-7 —
2-6 —
2-5 CH2 SIG (G)
2-4 CH2 SIG IN (X)
2-3 CH2 SIG OUT (Y)
2-2 CH2 REC SIG OUT (X)
2-1 CH2 REC SIG (G)
R1 1500
C1 47 16V
R101 1500
C101 47 16V
CP1
C2 10 50V
R2 3300
R3 1800
C3 47 16V
R4 1500
R5 47k
IC1 (1/2) NJM4558DD
+12V
R6 10k
D1 1SS119
C4 2.2 16V
R7 150k
C5 10p
R8 1k
D2 RD6.2ESB
+6V
C6 0.01
C7 100 16V
CN223
REG +11.7V IN 3-1
GND 3-2
— 3-3
AU-82B, 14-1
AU-82B, 14-2
AU-82B, 14-3
R9 330
C8 100p
R109 330
C108 100p
C9 10000p
CH1 LINE OUT (X) 1
CH1 LINE OUT (G) 2
CH2 LINE OUT (X) 3
CH2 LINE OUT (G) 4
AUDIO LINE CH-1/L OUT
AUDIO LINE CH-2/R OUT
CP101
C102 10 50V
R102 3300
R103 1800
C103 47 16V
R105 47k
IC1 (2/2)
R104 1500
D101 1SS119
R106 10k
C104 2.2 16V
R107 150k
C105 10p
CN1015
Q1 2SC2785
Q101 2SC2785
R111 47k
R11 47k
C110 47 16V
R113 47k
C10 47 16V
R13 47k
C13 100 16V
R10 4700
R110 4700
R112 22k
R12 22k
CN221
AU-82B, 10-6
AU-82B, 10-5
AU-82B, 10-4
AU-82B, 10-3
AU-82B, 10-2
AU-82B, 10-1
1-6 CH2 AUDIO OUT (X)
1-5 —
1-4 CH2 AUDIO OUT (G)
1-3 CH1 AUDIO OUT (X)
1-2 —
1-1 CH1 AUDIO OUT (G)
C111 100p
C11 100p
C12 10000p
CH1 LINE IN (X) 5
CH1 LINE IN (G) 6
CH2 LINE IN (X) 7
CH2 LINE IN (G) 8
AUDIO LINE CH-1/L IN
AUDIO LINE CH-2/R IN
CP-128
1-625-360-11
VO-7600
VO-7630

(48)

CP-128:OUTPUT AMPLIFIER


LOT NO.
DIP
CP-128
CP101
CP1
IC1
RED
WHITE
A
B
R10
Q1
R11
C10
R12
R13
R110
JW1
Q101
R111
C110
R112
R113
JW2
C12
C111
C11
C13
C8
C9
JW5
JW6
JW7
R109
C108
R104
R103
R106
C103
C105
C102
R101
R107
R102
C101
R1
R7
R8
C6
1
2
3

CP-128

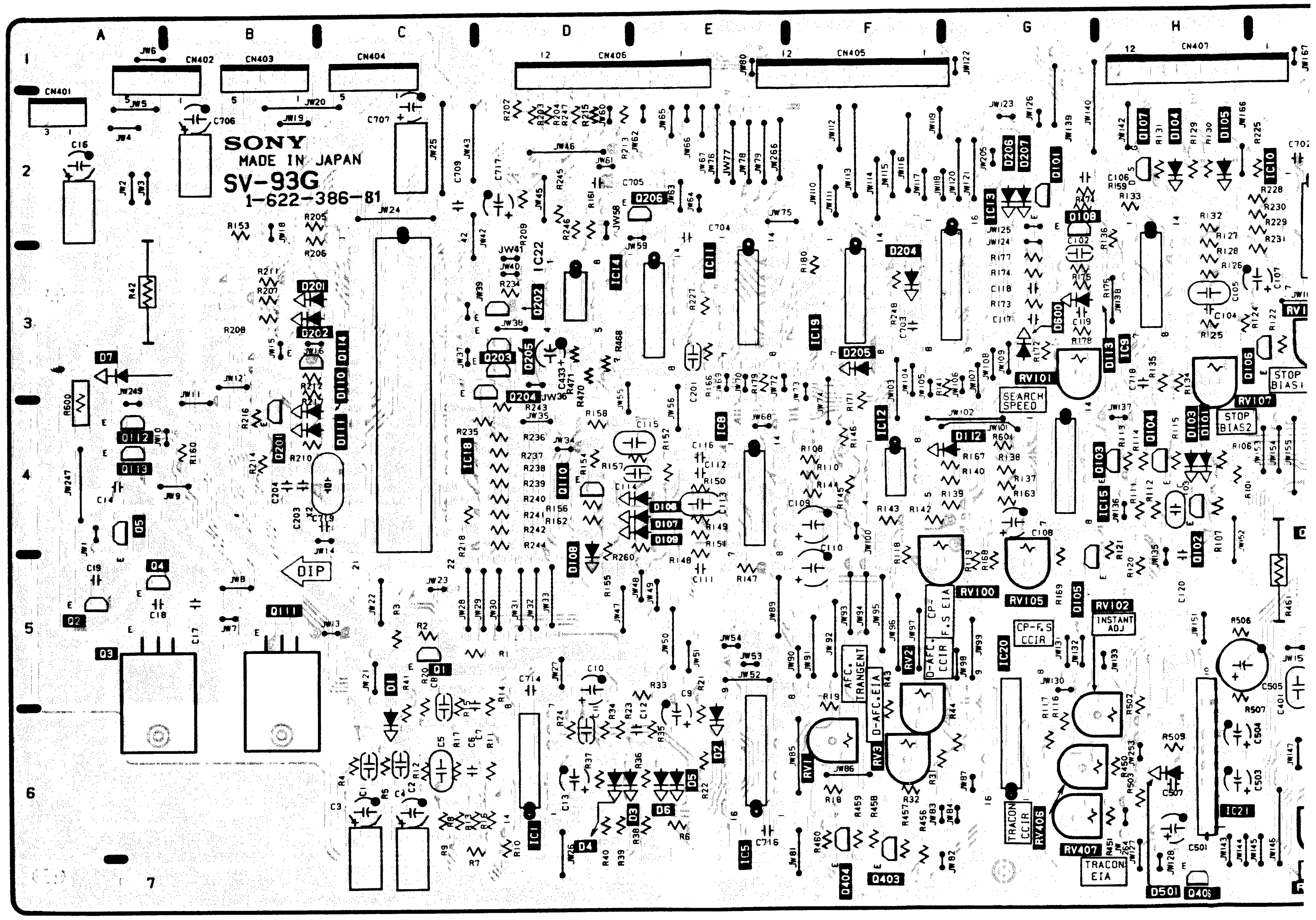
-COMPONENT SIDE-

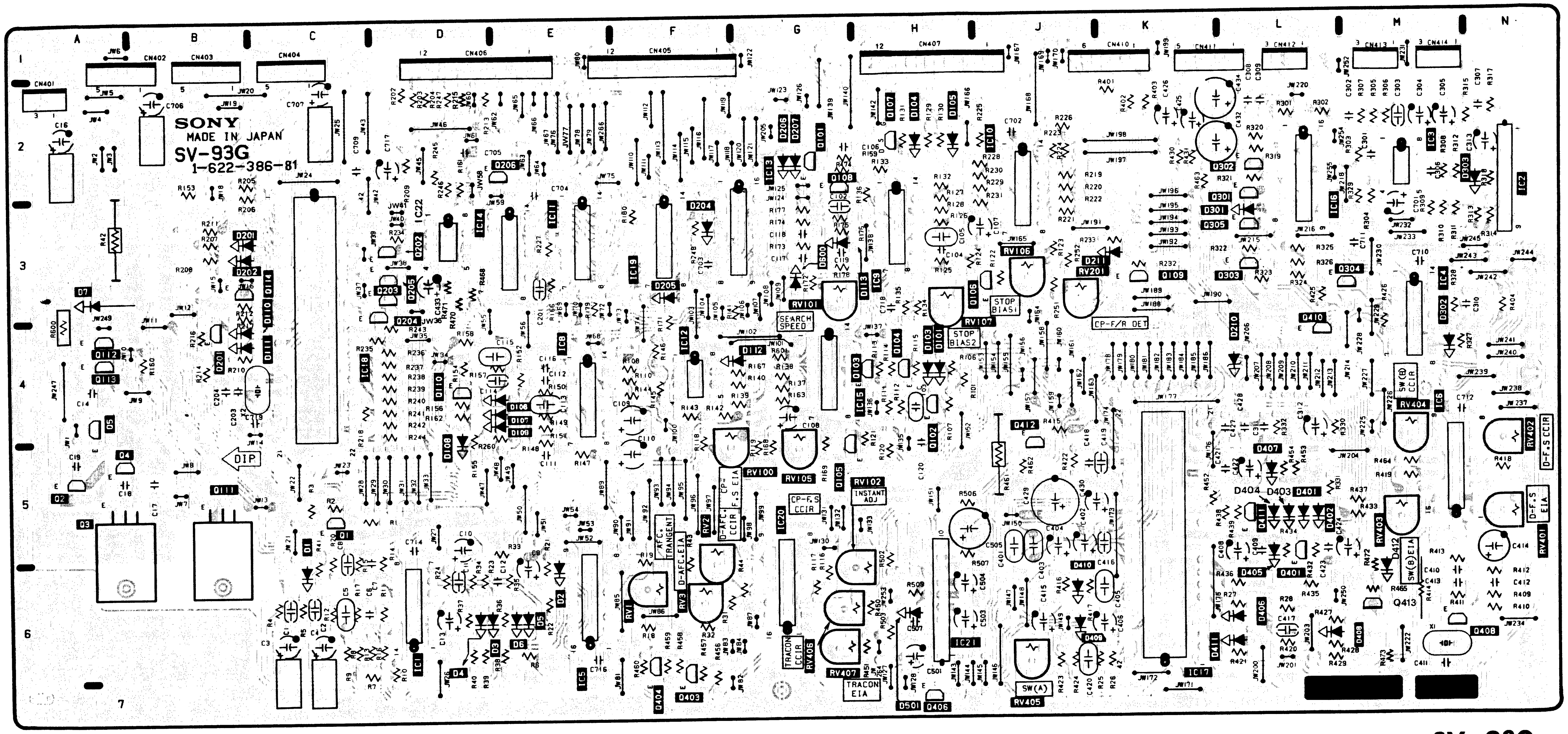
1-625-360-11
VO-7600
VO-7630

SV-93G:SERVO SYSTEM

SV-93G (1-622-386-81)

CN401	A-2
CN402	B-1
CN403	B-1
CN404	C-1
CN405	F-1
CN406	D-1
CN407	H-1
CN410	K-1
CN411	K-1
CN412	L-1
CN413	M-1
CN414	M-1
D1	C-6
D2	E-6
D3	D-6
D4	D-6
D5	E-6
D6	E-6
D7	A-3
D101	H-4
D103	H-4
D104	H-2
D105	H-2
D106	E-4
D107	E-4
D108	D-5
D109	E-4
D110	B-4
D111	B-4
D112	G-4
D113	G-3
D201	B-3
D202	B-3
D204	F-3
D205	F-3
D206	G-2
D207	G-2
D210	L-4
D211	K-3
D301	L-3
D302	M-4
D303	N-2
D401	L-5
D402	L-5
D403	L-5
D404	L-5
D405	L-5
D406	L-6
D407	L-5
D408	L-6
D409	J-6
D410	J-6
D411	L-6
D412	M-6
D501	H-6
D600	G-3
IC1	D-6
IC2	N-2
IC3	M-2
IC4	M-3
IC5	E-6
IC6	M-5
IC8	E-4
IC9	H-3
IC10	J-2
IC11	E-3
IC12	F-4
IC13	G-3
IC14	E-3
IC15	G-4
IC16	L-3
IC17	K-6
IC18	C-4
IC19	F-3
IC20	G-6
IC21	H-6
IC22	D-3
Q1	C-5
Q2	A-5
Q3	A-5
Q4	A-5
Q5	A-4
Q101	G-2
Q102	H-4
Q103	H-4
Q104	H-4
Q105	G-5
Q106	J-3
Q107	H-2
Q108	G-2
Q109	K-3
Q110	D-4
Q111	B-5
Q112	A-4
Q113	A-4
Q114	B-3
Q201	B-4
Q202	D-3
Q203	D-3
Q204	D-3
Q205	D-3
Q206	E-2
Q301	L-3
Q302	L-2
Q303	L-3
Q304	M-3
Q305	L-3
Q401	L-5
Q403	F-6
Q404	F-6
Q406	H-7
Q408	M-6
Q410	L-4
Q411	L-5
Q412	J-5
Q413	M-6
RV1	F-6
RV2	F-5
RV3	F-6
RV100	F-5
RV101	G-3
RV102	G-6
RV105	G-5
RV106	J-3
RV107	H-3
RV201	J-3
RV401	N-5
RV402	N-5
RV403	M-5
RV404	M-4
RV405	J-6
RV406	G-6
RV407	G-6
X1	M-6
X2	C-4


A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
CN401
CN402
CN403
CN404
CN405
CN406
CN407
SONY
MADE IN JAPAN
SV-93G
1-622-386-81
IC22
DIP
SEARCH SPEED
STOP BIAS1
STOP BIAS2
RV100
RV105
RV102
INSTANT ADJ
CP-F.S CCIR
CP-F.S EIA
D-AFC CCIR
D-AFC EIA
AFC TRANGENT
TRACON CCIR
TRACON EIA
RV406
RV407
IC21
D501
Q406
Q403
D404

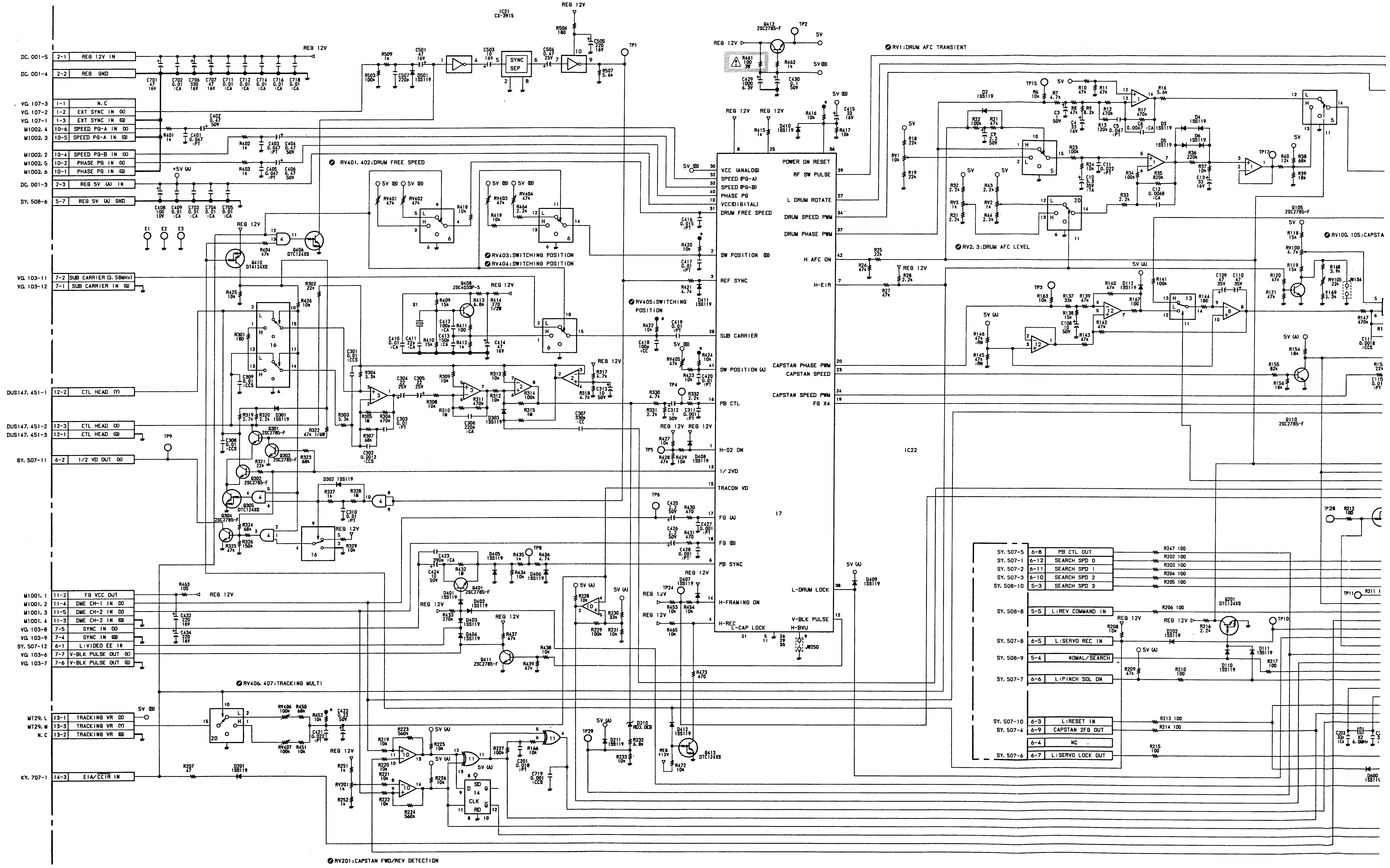

A
B
C
D
E
F
G
H
J
K
L
M
N
1
2
3
4
5
6
7
SONY
MADE IN JAPAN
SV-93G
1-622-386-81
CN401
CN402
CN403
CN404
CN405
CN406
CN407
CN410
CN411
CN412
CN413
CN414
DIP
SEARCH SPEED
STOP BIAS1
STOP BIAS2
CP-F/R DET
INSTANT ADJ
CP-F.S CCIR
AFC TRANGENT
D-AFC EIA
D-AFC CCIR
CP-F.S EIA
TRACON CCIR
TRACON EIA
SW(A)
SW(B) CCIR
SW(B) EIA
D-F.S CCIR
D-F.S EIA
RV1
RV2
RV3
RV100
RV101
RV102
RV105
RV106
RV107
RV201
RV401
RV402
RV403
RV404
RV405
RV406
RV407
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22

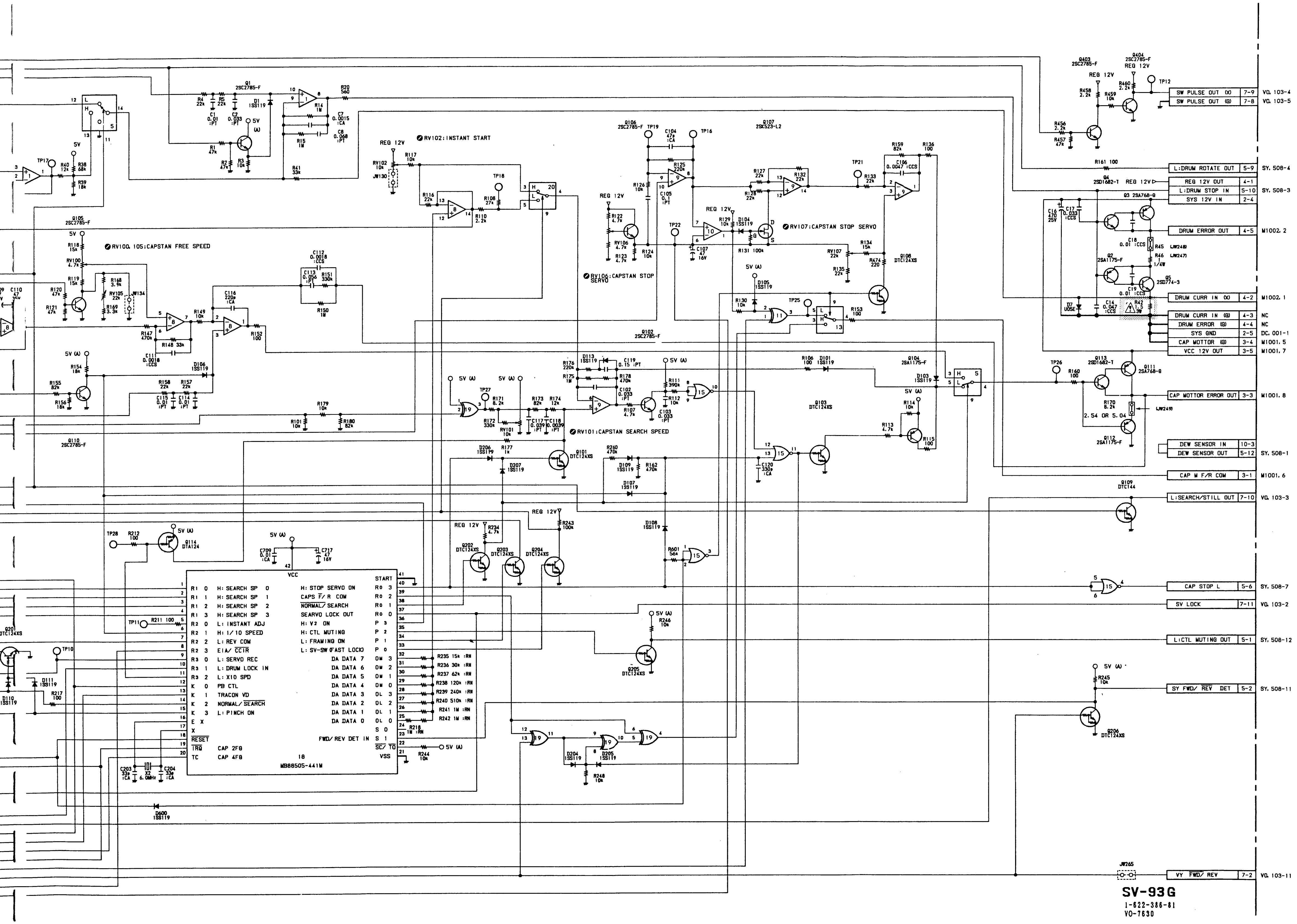
SV-93G

-COMPONENT SIDE-

1-622-386-81
VO-7630

SV-93G:SERVO SYSTEM


DC. 001-5 2-1 REG 12V IN
DC. 001-4 2-2 REG GND
VQ. 107-3 1-1 N.C
VQ. 107-2 1-2 EXT SYNC IN (H)
VQ. 107-1 1-3 EXT SYNC IN (G)
M1002. 4 10-6 SPEED PG-A IN (H)
M1002. 3 10-5 SPEED PG-A IN (G)
M1002. 2 10-4 SPEED PG-B IN (H)
M1002. 5 10-2 PHASE PG IN (H)
M1002. 6 10-1 PHASE PG IN (G)
DC. 001-3 2-3 REG 5V (A) IN
SY. 508-6 5-7 REG 5V (A) GND
VQ. 103-11 7-2 SUB CARRIER (3.58MHz)
VQ. 103-12 7-1 SUB CARRIER IN (G)
DUS147. 451-1 12-2 CTL HEAD (Y)
DUS147. 451-2 12-3 CTL HEAD (H)
DUS147. 451-3 12-1 CTL HEAD (G)
SY. 507-11 6-2 1/2 VD OUT (H)
M1001. 1 11-2 FG VCC OUT
M1001. 2 11-4 DME CH-1 IN (H)
M1001. 3 11-5 DME CH-2 IN (H)
M1001. 4 11-3 DME CH-2 IN (G)
VQ. 103-8 7-5 SYNC IN (H)
VQ. 103-9 7-4 SYNC IN (G)
SY. 507-12 6-1 L:VIDEO EE IN
VQ. 103-6 7-7 V-BLK PULSE OUT (H)
VQ. 103-7 7-6 V-BLK PULSE OUT (G)
MT29. L 13-1 TRACKING VR (H)
MT29. M 13-3 TRACKING VR (Y)
N.C 13-2 TRACKING VR (G)
KY. 707-1 14-3 EIA/CCIR IN
IC21 CX-391S
SYNC SEP
REG 12V
5V (A)
5V (B)
RV401. 402:DRUM FREE SPEED
RV403:SWITCHING POSITION
RV404:SWITCHING POSITION
RV405:SWITCHING POSITION
RV406. 407:TRACKING MULTI
RV201:CAPSTAN FWD/REV DETECTION
RV1:DRUM AFC TRANSIENT
RV2. 3:DRUM AFC LEVEL
RV100. 105:CAPSTA
IC22
VCC (ANALOG)
SPEED (PG-A)
SPEED (PG-B)
PHASE PG
VCC (DIGITAL)
DRUM FREE SPEED
SW POSITION (B)
REF SYNC
SUB CARRIER
SW POSITION (A)
PB CTL
H-02 ON
1/ 2VD
TRACON VD
FG (A)
FG (B)
PB SYNC
H-FRAMING ON
H-REC
L-CAP LOCK
POWER ON RESET
RF SW PULSE
L DRUM ROTATE
DRUM SPEED PWM
DRUM PHASE PWM
H AFC ON
H-EIR
CAPSTAN PHASE PWM
CAPSTAN SPEED
CAPSTAN SPEED PWM
FG X4
L-DRUM LOCK
V-BLK PULSE
H-BVU
SY. 507-5 6-8 PB CTL OUT
SY. 507-1 6-12 SEARCH SPD 0
SY. 507-2 6-11 SEARCH SPD 1
SY. 507-3 6-10 SEARCH SPD 2
SY. 508-10 5-3 SEARCH SPD 3
SY. 508-8 5-5 L:REV COMMAND IN
SY. 507-8 6-5 L:SERVO REC IN
SY. 508-9 5-4 NOMAL/SEARCH
SY. 507-7 6-6 L:PINCH SOL ON
SY. 507-10 6-3 L:RESET IN
SY. 507-4 6-9 CAPSTAN 2FG OUT
6-4 NC
SY. 507-6 6-7 L:SERVO LOCK OUT
TP1
TP2
TP3
TP4
TP5
TP6
TP8
TP9
TP10
TP11
TP15
TP17
TP24
TP28
TP29


Ⓥ RV102: INSTANT START
Ⓥ RV100, 105: CAPSTAN FREE SPEED
Ⓥ RV106: CAPSTAN STOP SERVO
Ⓥ RV107: CAPSTAN STOP SERVO
Ⓥ RV101: CAPSTAN SEARCH SPEED
VCC
R1 0 H: SEARCH SP 0
R1 1 H: SEARCH SP 1
R1 2 H: SEARCH SP 2
R1 3 H: SEARCH SP 3
R2 0 L: INSTANT ADJ
R2 1 H: 1/10 SPEED
R2 2 L: REV COM
R2 3 EIA/ CCIR
R3 0 L: SERVO REC
R3 1 L: DRUM LOCK IN
R3 2 L: X10 SPD
K 0 PB CTL
K 1 TRACON VD
K 2 NORMAL/ SEARCH
K 3 L: PINCH ON
E X
X
RESET
IRQ CAP 2FB
TC CAP 4FB
START
H: STOP SERVO ON R0 3
CAPS F/ R COM R0 2
NORMAL/ SEARCH R0 1
SEARVO LOCK OUT R0 0
H: V2 ON P 3
H: CTL MUTING P 2
L: FRAMING ON P 1
L: SV-SW (FAST LOCK) P 0
DA DATA 7 OM 3
DA DATA 6 OM 2
DA DATA 5 OM 1
DA DATA 4 OM 0
DA DATA 3 OL 3
DA DATA 2 OL 2
DA DATA 1 OL 1
DA DATA 0 OL 0
S 0
FWD/ REV DET IN S 1
SC/ TO
VSS
MB88505-441M
SW PULSE OUT (X) 7-9 VO. 103-4
SW PULSE OUT (G) 7-8 VO. 103-5
L:DRUM ROTATE OUT 5-9 SY. 508-4
REG 12V OUT 4-1
L:DRUM STOP IN 5-10 SY. 508-3
SYS 12V IN 2-4
DRUM ERROR OUT 4-5 M1002. 2
DRUM CURR IN (X) 4-2 M1002. 1
DRUM CURR IN (G) 4-3 NC
DRUM ERROR (G) 4-4 NC
SYS GND 2-5 DC. 001-1
CAP MOTTOR (G) 3-4 M1001. 5
VCC 12V OUT 3-5 M1001. 7
CAP MOTTOR ERROR OUT 3-3 M1001. 8
DEW SENSOR IN 10-3
DEW SENSOR OUT 5-12 SY. 508-1
CAP M F/R COM 3-1 M1001. 6
L:SEARCH/STILL OUT 7-10 VO. 103-3
CAP STOP L 5-6 SY. 508-7
SV LOCK 7-11 VO. 103-2
L:CTL MUTING OUT 5-1 SY. 508-12
SY FWD/ REV DET 5-2 SY. 508-11
VY FWD/ REV 7-2 VO. 103-11
SV-93G
1-622-386-61
VO-7630

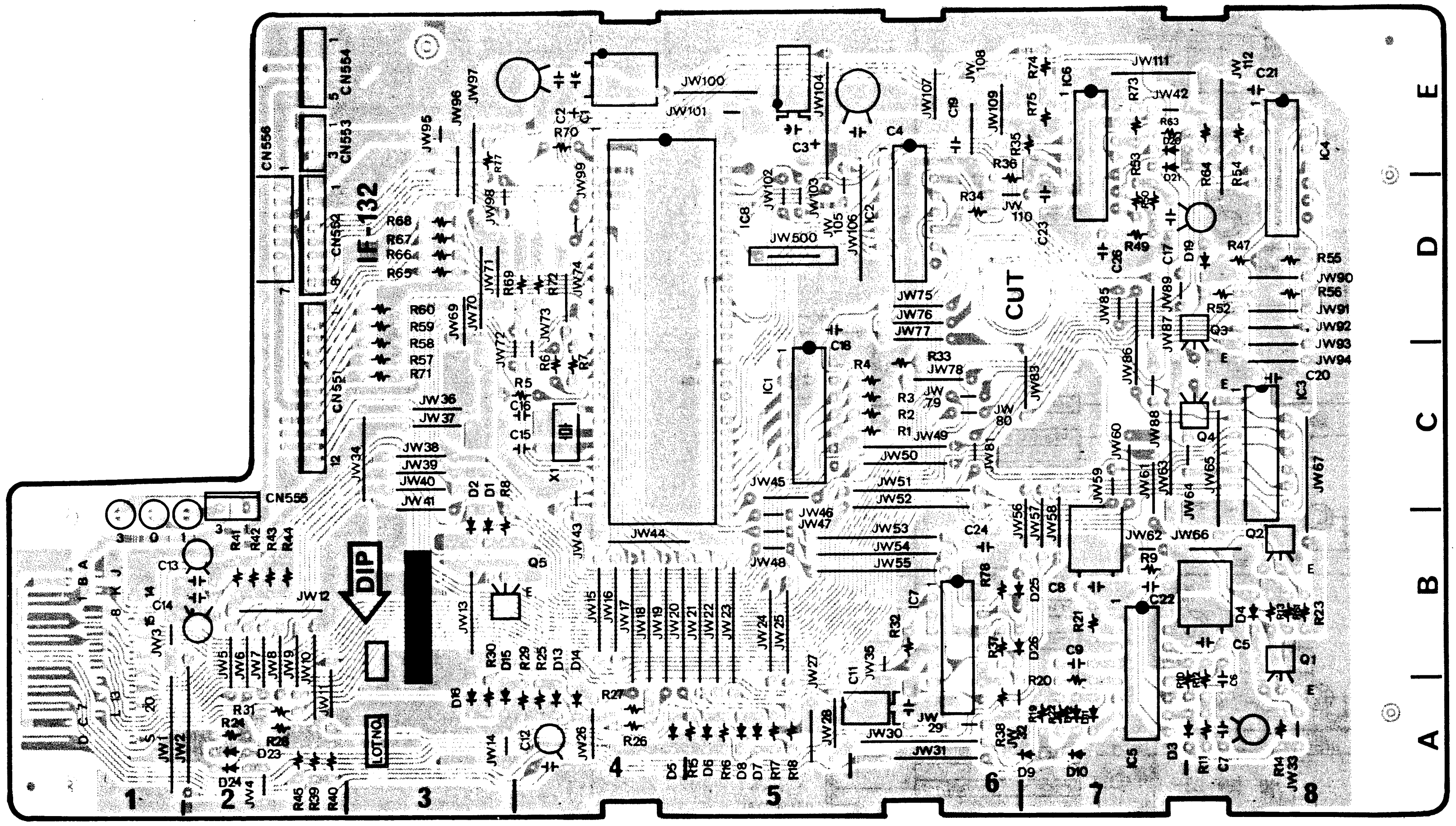
NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

IF-132:33P INTERFACE

IF-132 (1-622-387-12,13)

CN551	C-2
CN552	D-2
CN553	E-2
CN554	E-2
CN555	C-2
CN556	D-2
D1	B-3
D2	B-3
D3	A-8
D4	B-8
D5	A-4
D6	A-5
D7	A-5
D8	A-5
D9	A-7
D10	A-7
D13	A-4
D14	A-4
D15	A-3
D16	A-3
D19	D-8
D20	E-7
D21	E-7
D23	A-2
D24	A-2
D25	B-7
D26	B-7
IC1	C-5
IC2	D-6
IC3	C-8
IC4	E-8
IC5	B-7
IC6	E-7
IC7	B-6
IC8	D-4
Q1	B-8
Q2	B-8
Q3	D-8
Q4	C-8
Q5	B-3
X1	C-4

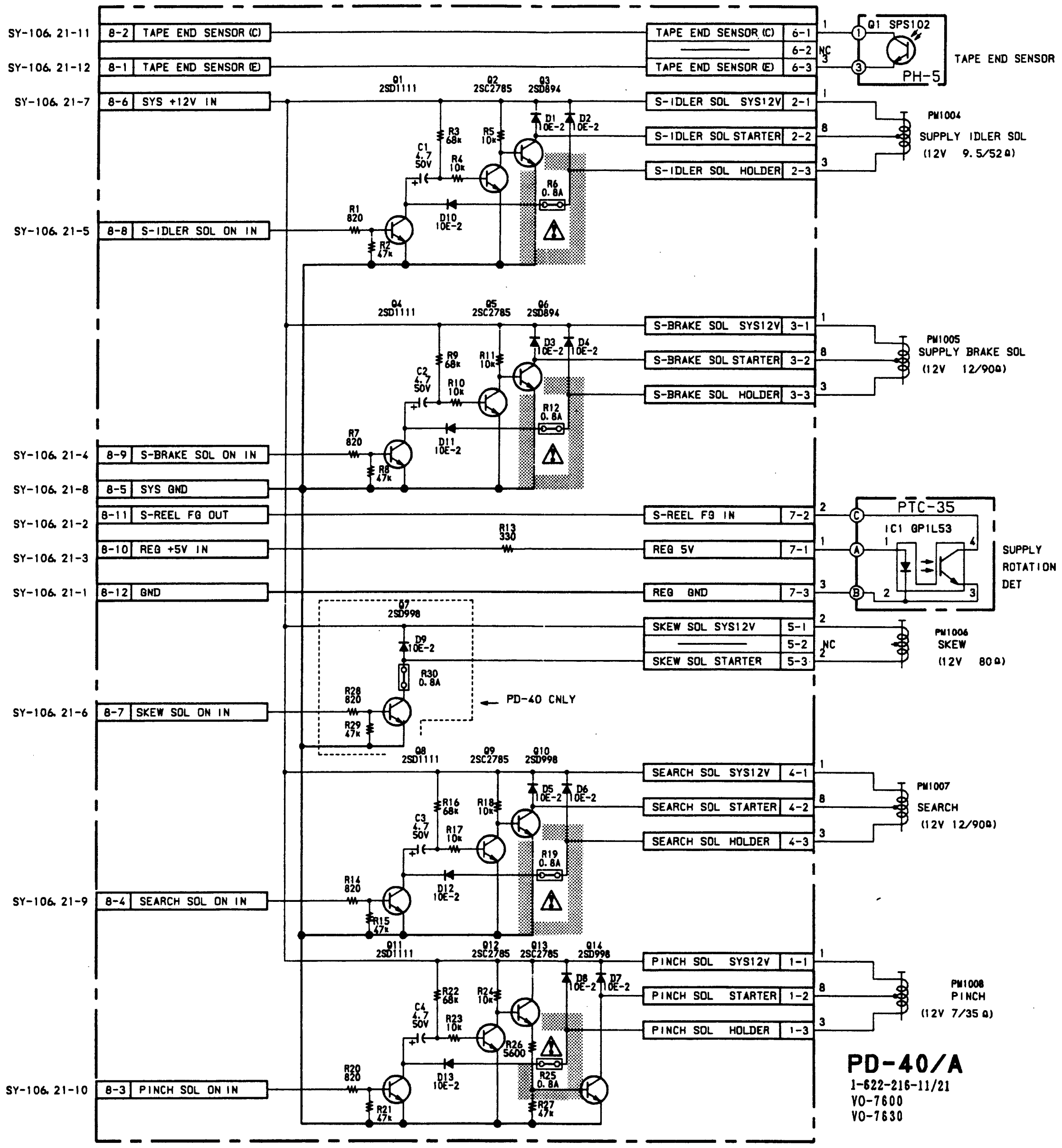

A
B
C
D
E
1
2
3
4
5
6
7
8
IF-132
DIP
CUT
CN551
CN552
CN553
CN554
CN555
CN556
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
Q1
Q2
Q3
Q4
Q5
X1
JW44
JW500
JW100
JW101

IF-132

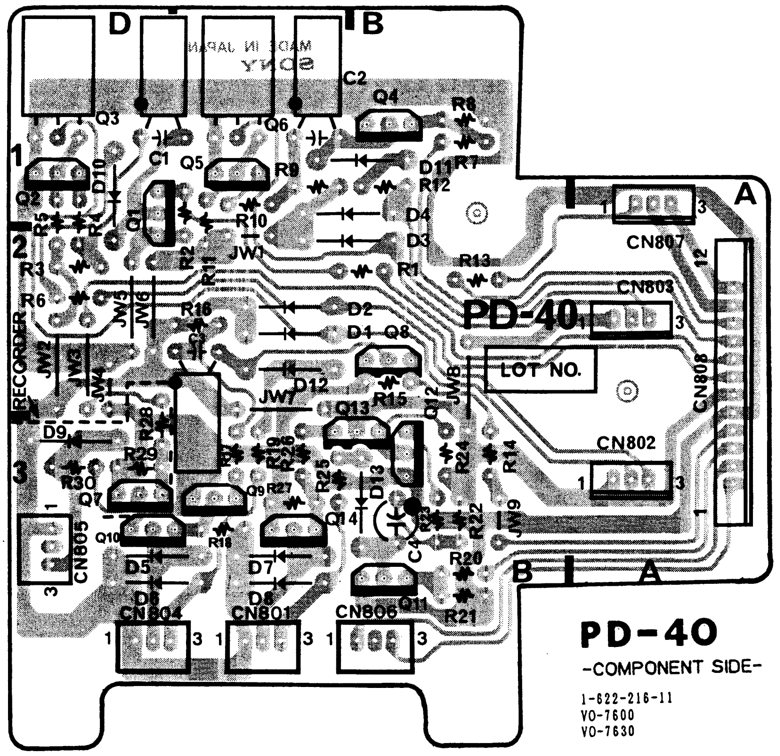
-COMPONENT SIDE-

1-622-387-12.13
VO-7600
VO-7630

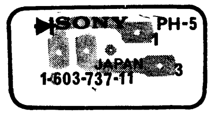
PD-40:PLUNGER SOLENOIDS
PH-5:TAPE BEGINNING/END SENSOR
PTC-35:S/T REEL ROTATION DETECTOR


SY-106 21-11 8-2 TAPE END SENSOR (C)
SY-106 21-12 8-1 TAPE END SENSOR (E)
SY-106 21-7 8-6 SYS +12V IN
SY-106 21-5 8-8 S-IDLER SOL ON IN
SY-106 21-4 8-9 S-BRAKE SOL ON IN
SY-106 21-8 8-5 SYS GND
SY-106 21-2 8-11 S-REEL FG OUT
SY-106 21-3 8-10 REG +5V IN
SY-106 21-1 8-12 GND
SY-106 21-6 8-7 SKEW SOL ON IN
SY-106 21-9 8-4 SEARCH SOL ON IN
SY-106 21-10 8-3 PINCH SOL ON IN
TAPE END SENSOR (C) 6-1
6-2 NC
TAPE END SENSOR (E) 6-3
Q1 SPS102
PH-5
TAPE END SENSOR
S-IDLER SOL SYS12V 2-1
S-IDLER SOL STARTER 2-2
S-IDLER SOL HOLDER 2-3
PM1004 SUPPLY IDLER SOL (12V 9.5/52Ω)
S-BRAKE SOL SYS12V 3-1
S-BRAKE SOL STARTER 3-2
S-BRAKE SOL HOLDER 3-3
PM1005 SUPPLY BRAKE SOL (12V 12/90Ω)
S-REEL FG IN 7-2
REG 5V 7-1
REG GND 7-3
PTC-35
IC1 GP1L53
SUPPLY ROTATION DET
SKEW SOL SYS12V 5-1
5-2 NC
SKEW SOL STARTER 5-3
PM1006 SKEW (12V 80Ω)
PD-40 ONLY
SEARCH SOL SYS12V 4-1
SEARCH SOL STARTER 4-2
SEARCH SOL HOLDER 4-3
PM1007 SEARCH (12V 12/90Ω)
PINCH SOL SYS12V 1-1
PINCH SOL STARTER 1-2
PINCH SOL HOLDER 1-3
PM1008 PINCH (12V 7/35Ω)
Q1 2SD1111
Q2 2SC2785
Q3 2SD894
Q4 2SD1111
Q5 2SC2785
Q6 2SD894
Q7 2SD998
Q8 2SD1111
Q9 2SC2785
Q10 2SD998
Q11 2SD1111
Q12 2SC2785
Q13 2SC2785
Q14 2SD998
R13 330
⚠

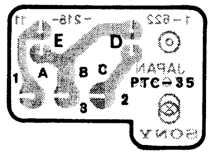
PD-40/A
1-622-216-11/21
VO-7600
VO-7630


D
B
A
B
A
CN807
CN803
CN808
CN802
CN805
CN804
CN801
CN806
PD-40
LOT NO.
RECORDER
MADE IN JAPAN
SONY

PD-40
-COMPONENT SIDE-
1-622-216-11
VO-7600
VO-7630


SONY
PH-5
JAPAN
1-603-737-11

PH-5
-COMPONENT SIDE-
1-603-737-11
VO-7600
VO-7630

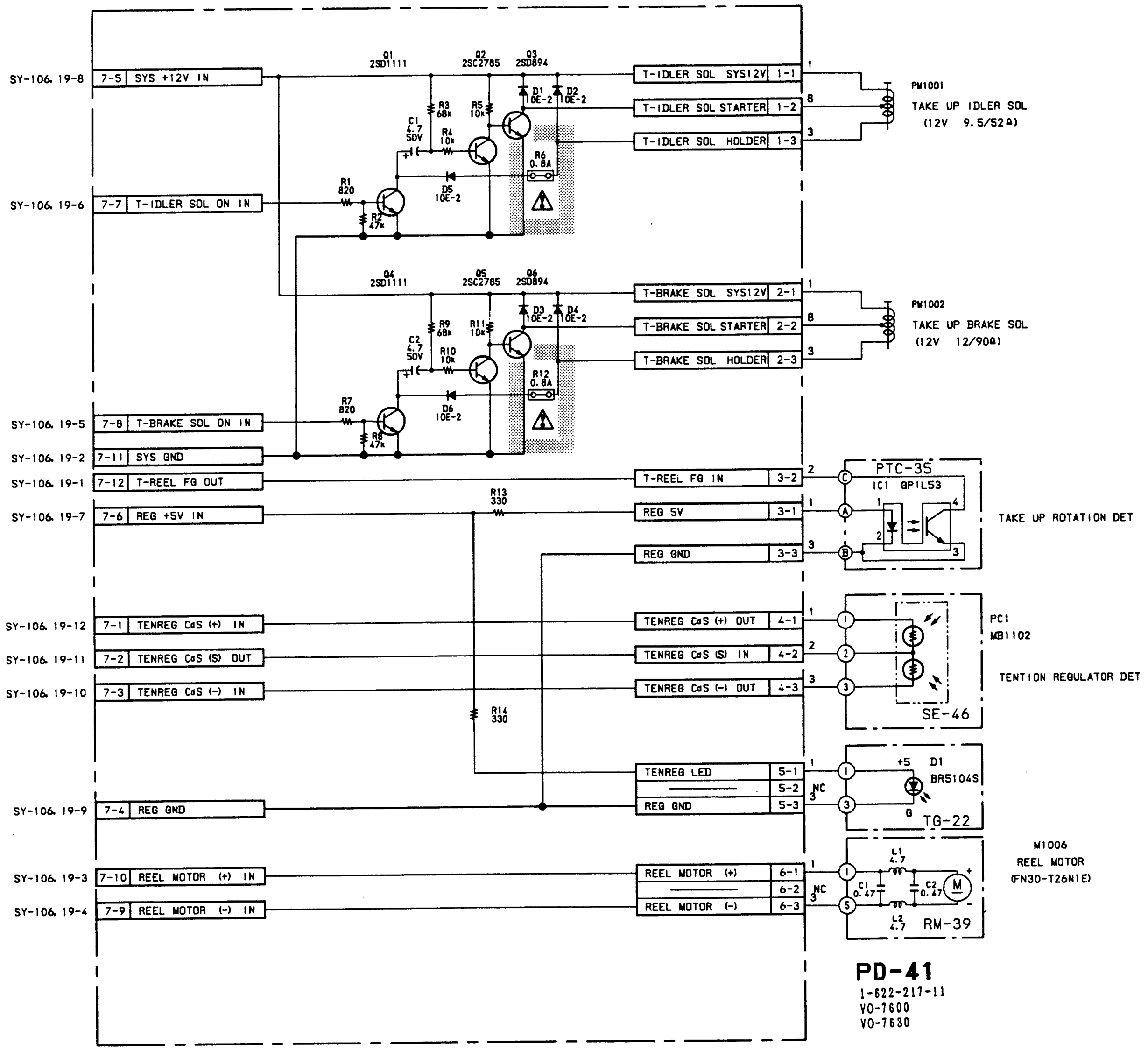

E
D
A
B
C
PTC-35
JAPAN
SONY

PTC-35
-COMPONENT SIDE-
1-622-218-11
VO-7600
VO-7630

NOTE;

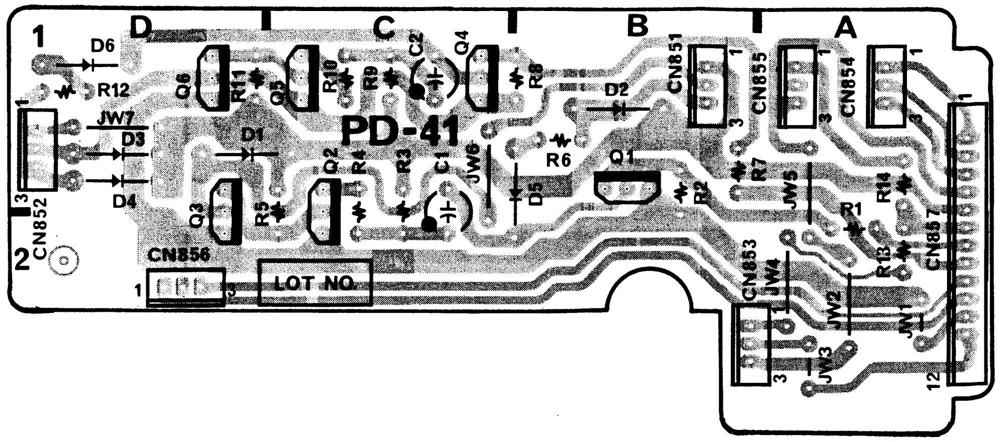
The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

PD-41:PLUNGER SOLENOIDS
PTC-35:S/T REEL ROTATION DETECTOR
RM-39:REEL MOTOR
SE-46:TENSION REGULATOR DETECTOR
TG-22:TENSION REGULATOR LED

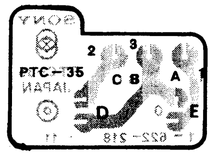

SY-106, 19-8
7-5 SYS +12V IN
SY-106, 19-6
7-7 T-IDLER SOL ON IN
SY-106, 19-5
7-8 T-BRAKE SOL ON IN
SY-106, 19-2
7-11 SYS GND
SY-106, 19-1
7-12 T-REEL FG OUT
SY-106, 19-7
7-6 REG +5V IN
SY-106, 19-12
7-1 TENREG CdS (+) IN
SY-106, 19-11
7-2 TENREG CdS (S) OUT
SY-106, 19-10
7-3 TENREG CdS (-) IN
SY-106, 19-9
7-4 REG GND
SY-106, 19-3
7-10 REEL MOTOR (+) IN
SY-106, 19-4
7-9 REEL MOTOR (-) IN
Q1 2SD1111
Q2 2SC2785
Q3 2SD894
Q4 2SD1111
Q5 2SC2785
Q6 2SD894
R1 820
R2 47k
R3 68k
R4 10k
R5 10k
R6 0.8A
C1 4.7 50V
D1 10E-2
D2 10E-2
D5 10E-2
R7 820
R8 47k
R9 68k
R10 10k
R11 10k
R12 0.8A
C2 4.7 50V
D3 10E-2
D4 10E-2
D6 10E-2
R13 330
R14 330
T-IDLER SOL SYS12V 1-1
T-IDLER SOL STARTER 1-2
T-IDLER SOL HOLDER 1-3
PM1001
TAKE UP IDLER SOL
(12V 9.5/52Ω)
T-BRAKE SOL SYS12V 2-1
T-BRAKE SOL STARTER 2-2
T-BRAKE SOL HOLDER 2-3
PM1002
TAKE UP BRAKE SOL
(12V 12/90Ω)
T-REEL FG IN 3-2
REG 5V 3-1
REG GND 3-3
PTC-35
IC1 GP1L53
TAKE UP ROTATION DET
TENREG CdS (+) OUT 4-1
TENREG CdS (S) IN 4-2
TENREG CdS (-) OUT 4-3
PC1
MB1102
TENTION REGULATOR DET
SE-46
TENREG LED 5-1
5-2
REG GND 5-3
NC
+5
D1
BR5104S
TG-22
M1006
REEL MOTOR
(FN30-T26N1E)
REEL MOTOR (+) 6-1
6-2
REEL MOTOR (-) 6-3
L1 4.7
L2 4.7
C1 0.47
C2 0.47
M
RM-39
PD-41
1-622-217-11
VO-7600
VO-7630

NOTE;

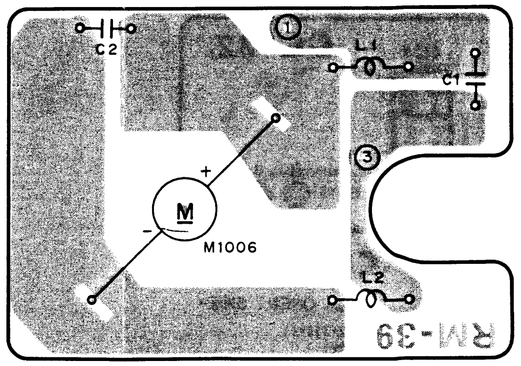
The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.


PD-41
A
B
C
D
CN851
CN852
CN853
CN854
CN855
CN856
CN857
LOT NO.
Q1
Q2
Q3
Q4
Q5
Q6
D1
D2
D3
D4
D5
D6
JW1
JW2
JW3
JW4
JW5
JW6
JW7

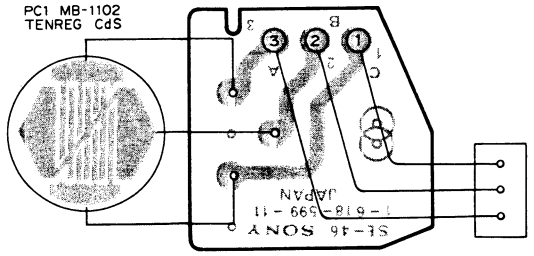
PD-41
-COMPONENT SIDE-
1-622-217-11
VO-7600
VO-7630


PTC-35
JAPAN
A
C
D
E
1-622-218-11

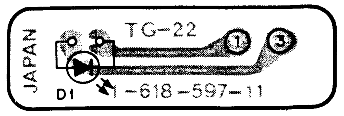
PTC-35
-COMPONENT SIDE-
1-622-218-11
VO-7600
VO-7630


C1
C2
L1
L2
M
M1006
RM-39

RM-39 -SOLDERING SIDE-
1-618-873-11
VO-7600
VO-7630

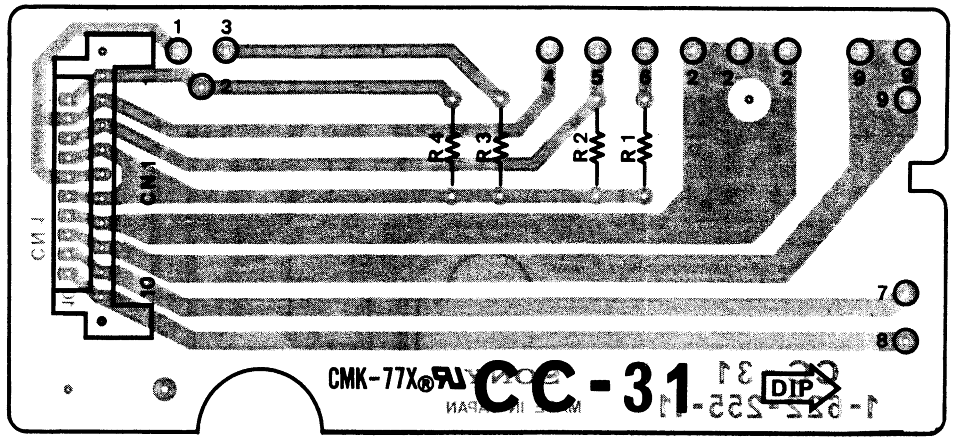

PC1 MB-1102
TENREG CdS
A
B
C
1-618-599-11
JAPAN
SE-46 SONY

SE-46
-SOLDERING SIDE-
1-618-599-11
VO-7600
VO-7630

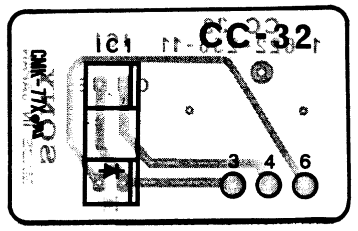

TG-22
JAPAN
D1
1-618-597-11

TG-22
- SOLDERING SIDE -
1-618-597-11
VO-7600
VO-7630

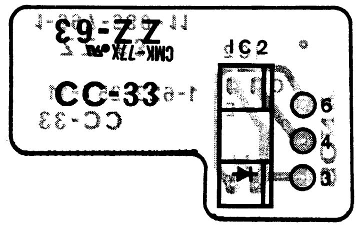
CC-31:CASSETTE COMPARTMENT DRIVER
CC-32:CASSETTE IN DETECTOR
CC-33:CASSETTE DOWN DETECTOR
LP-41:CASSETTE COMPARTMENT LIGHT


1
3
2
4
5
8
2
2
2
9
9
9
R4
R3
R2
R1
CN1
10
7
8
CMK-77X
CC-31
DIP
1-622-255-11

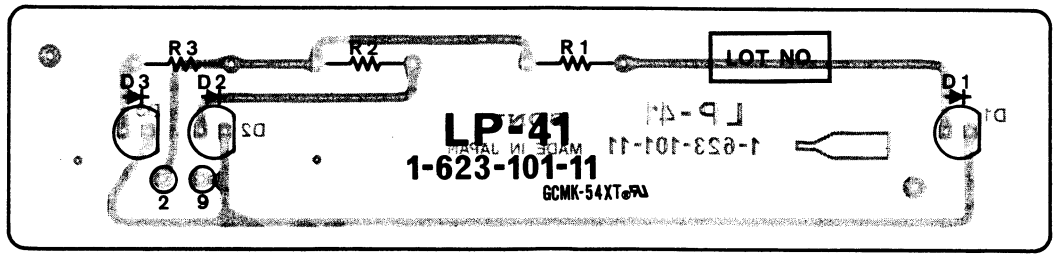
CC-31
-COMPONENT SIDE-
1-622-255-11
VO-7600
VO-7630



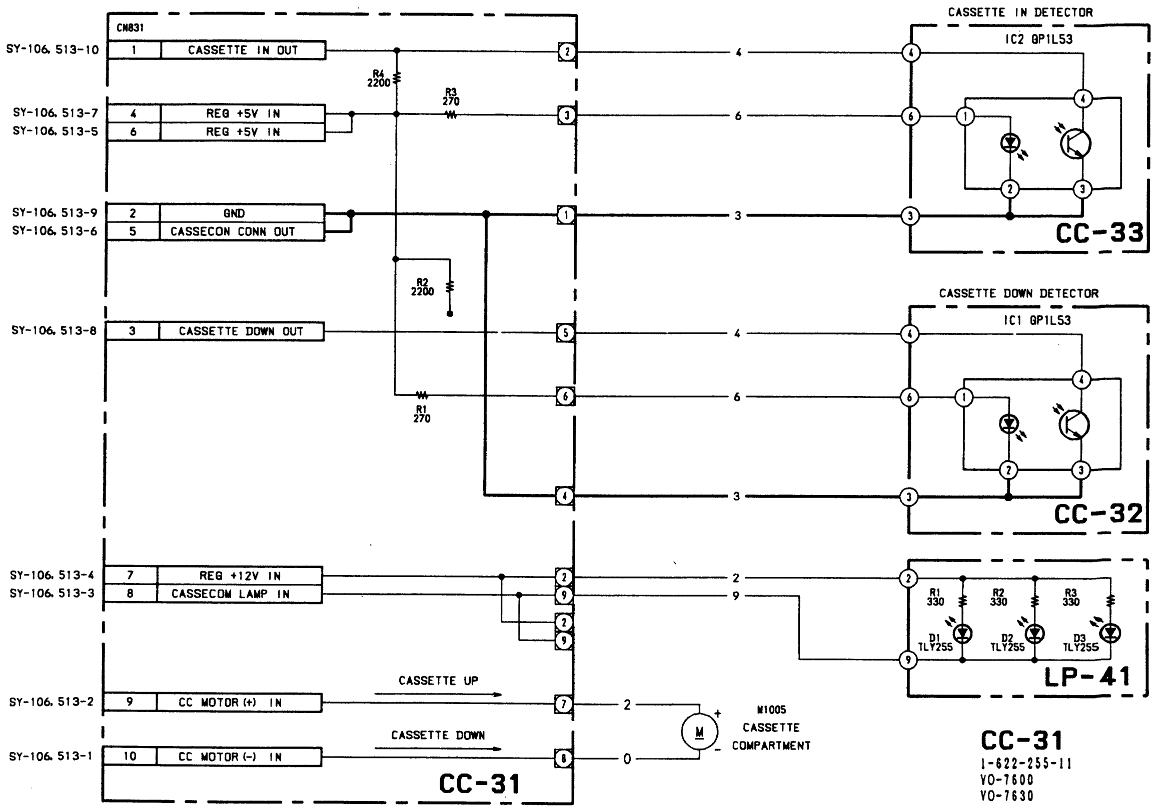
CC-32
-COMPONENT SIDE-
1-622-256-11
VO-7600
VO-7630



CC-33
-COMPONENT SIDE-
1-622-257-11
VO-7600
VO-7630

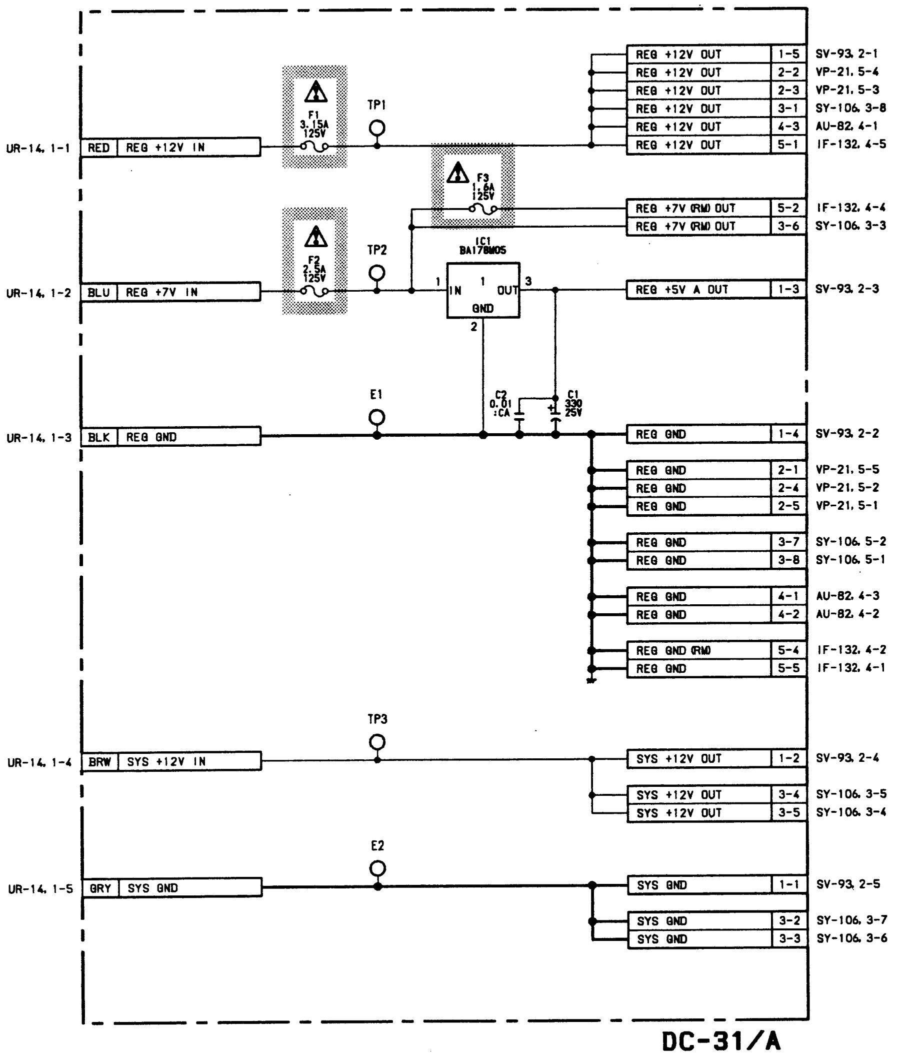

R3
R2
R1
LOT NO
D3
D2
D1
LP-41
1-623-101-11
GCMK-54XT
2
9

LP-41
-COMPONENT SIDE-
1-623-101-11
VO-7600
VO-7630


CN831
SY-106, 513-10
1
CASSETTE IN OUT
SY-106, 513-7
4
REG +5V IN
SY-106, 513-5
6
REG +5V IN
SY-106, 513-9
2
GND
SY-106, 513-6
5
CASSECON CONN OUT
SY-106, 513-8
3
CASSETTE DOWN OUT
SY-106, 513-4
7
REG +12V IN
SY-106, 513-3
8
CASSECOM LAMP IN
SY-106, 513-2
9
CC MOTOR (+) IN
SY-106, 513-1
10
CC MOTOR (−) IN
R4
2200
R3
270
R2
2200
R1
270
CASSETTE UP
CASSETTE DOWN
CC-31
M1005
CASSETTE
COMPARTMENT
M
CASSETTE IN DETECTOR
IC2 GP1L53
CC-33
CASSETTE DOWN DETECTOR
IC1 GP1L53
CC-32
R1
330
R2
330
R3
330
D1
TLY255
D2
TLY255
D3
TLY255
LP-41

CC-31
1-622-255-11
VO-7600
VO-7630

DC-31/A:DC SUPPLY


UR-14, 1-1
RED
REG +12V IN
UR-14, 1-2
BLU
REG +7V IN
UR-14, 1-3
BLK
REG GND
UR-14, 1-4
BRW
SYS +12V IN
UR-14, 1-5
GRY
SYS GND
F1
3.15A
125V
F2
2.5A
125V
F3
1.6A
125V
TP1
TP2
TP3
E1
E2
IC1
BA178M05
IN
OUT
GND
1
2
3
C2
0.01
:CA
C1
330
25V
REG +12V OUT 1-5 SV-93, 2-1
REG +12V OUT 2-2 VP-21, 5-4
REG +12V OUT 2-3 VP-21, 5-3
REG +12V OUT 3-1 SY-106, 3-8
REG +12V OUT 4-3 AU-82, 4-1
REG +12V OUT 5-1 IF-132, 4-5
REG +7V (RM) OUT 5-2 IF-132, 4-4
REG +7V (RM) OUT 3-6 SY-106, 3-3
REG +5V A OUT 1-3 SV-93, 2-3
REG GND 1-4 SV-93, 2-2
REG GND 2-1 VP-21, 5-5
REG GND 2-4 VP-21, 5-2
REG GND 2-5 VP-21, 5-1
REG GND 3-7 SY-106, 5-2
REG GND 3-8 SY-106, 5-1
REG GND 4-1 AU-82, 4-3
REG GND 4-2 AU-82, 4-2
REG GND (RM) 5-4 IF-132, 4-2
REG GND 5-5 IF-132, 4-1
SYS +12V OUT 1-2 SV-93, 2-4
SYS +12V OUT 3-4 SY-106, 3-5
SYS +12V OUT 3-5 SY-106, 3-4
SYS GND 1-1 SV-93, 2-5
SYS GND 3-2 SY-106, 3-7
SYS GND 3-3 SY-106, 3-6

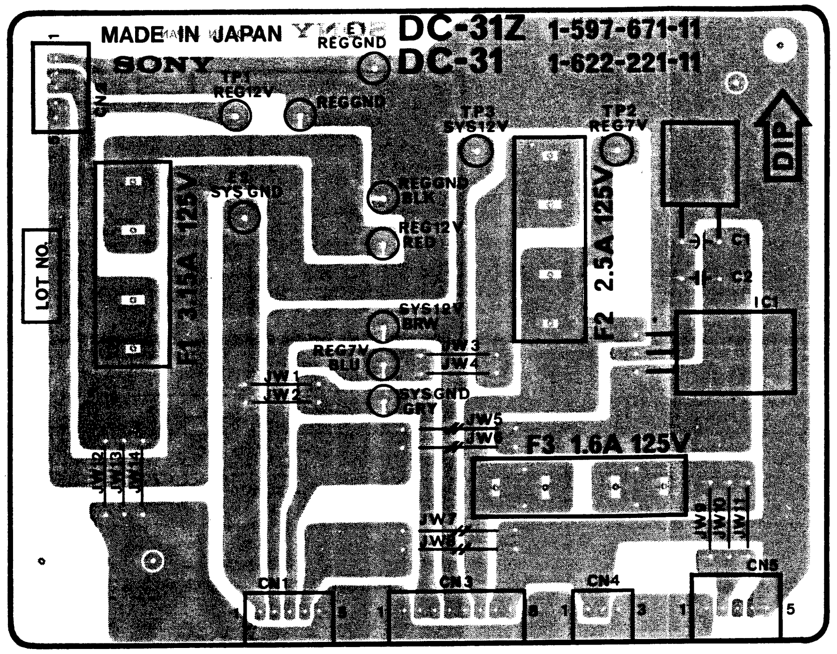
DC-31/A

1-622-221-11/21
VO-7600
VO-7630

NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

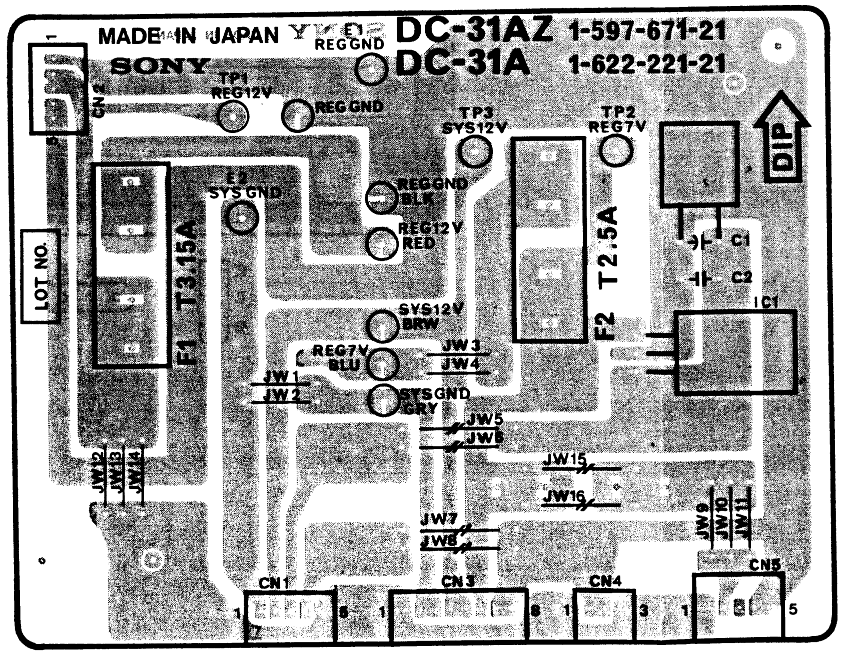
DC-31:DC SUPPLY(FOR UC)
DC-31A:DC SUPPLY(FOR EK)


MADE IN JAPAN
SONY
DC-31Z 1-597-671-11
DC-31 1-622-221-11
E1
REGGND
TP1
REG12V
REGGND
TP3
SYS12V
TP2
REG7V
DIP
E2
SYS GND
REGGND BLK
REG12V RED
SYS12V BRW
REG7V BLU
SYSGND GRY
LOT NO.
F1 3.15A 125V
F2 2.5A 125V
F3 1.6A 125V
IC1
C1
C2
JW1
JW2
JW3
JW4
JW5
JW6
JW7
JW8
JW9
JW10
JW11
JW12
JW13
JW14
CN1
CN2
CN3
CN4
CN5
1
5
8
3

DC-31

-COMPONENT SIDE-

1-622-221-11
VO-7600

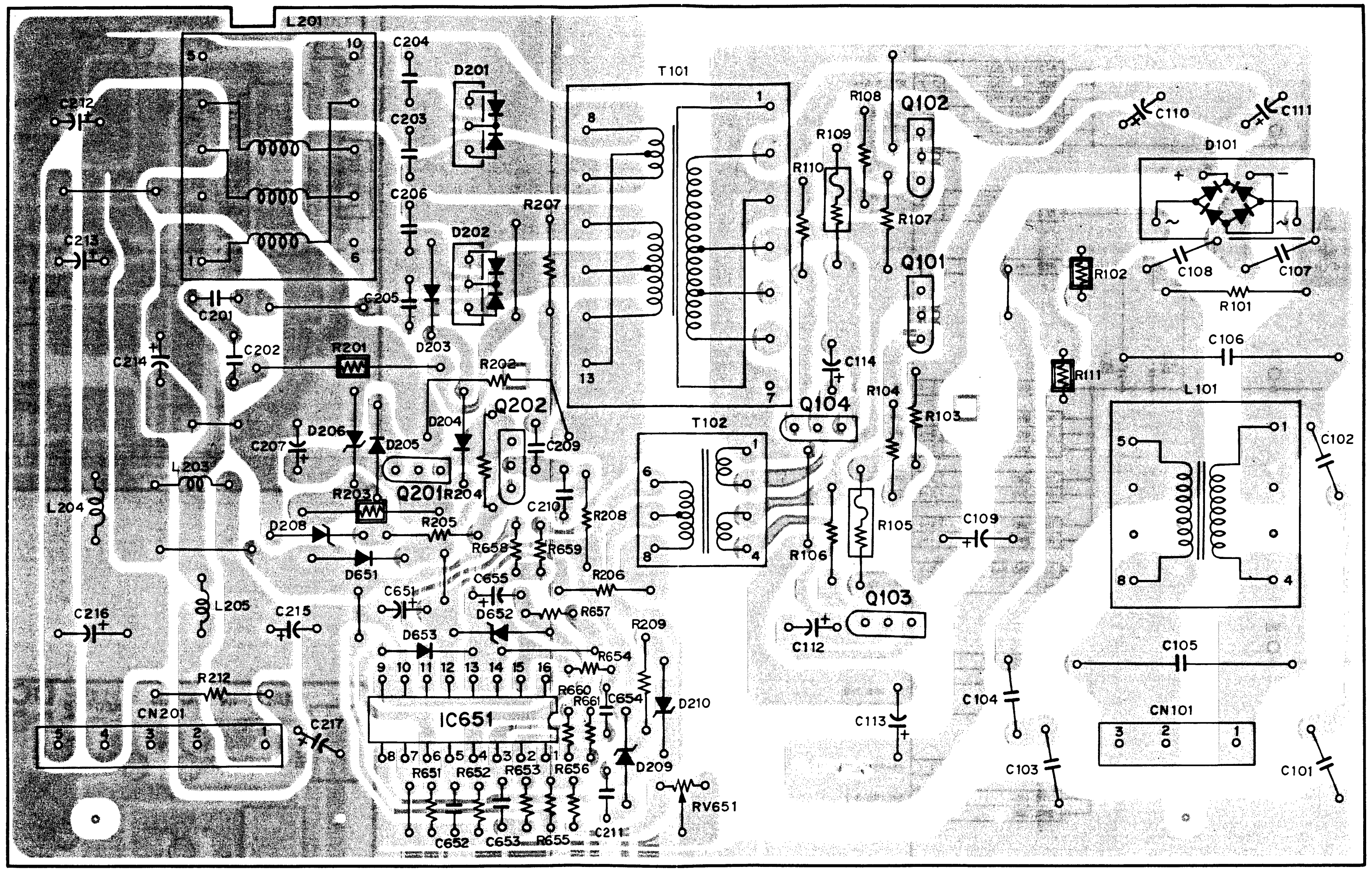

MADE IN JAPAN
SONY
DC-31AZ 1-597-671-21
DC-31A 1-622-221-21
E1
REGGND
TP1
REG12V
REG GND
TP3
SYS12V
TP2
REG7V
DIP
E2
SYS GND
REGGND BLK
REG12V RED
SYS12V BRW
REG7V BLU
SYSGND GRY
LOT NO.
F1 T3.15A
F2 T2.5A
IC1
C1
C2
JW1
JW2
JW3
JW4
JW5
JW6
JW7
JW8
JW9
JW10
JW11
JW12
JW13
JW14
JW15
JW16
CN1
CN2
CN3
CN4
CN5
1
5
8
3

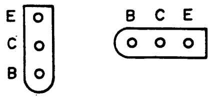
DC-31A

-COMPONENT SIDE-

1-622-221-21
VO-7630

UR-14:SWITCHING REGULATOR (FOR UC)

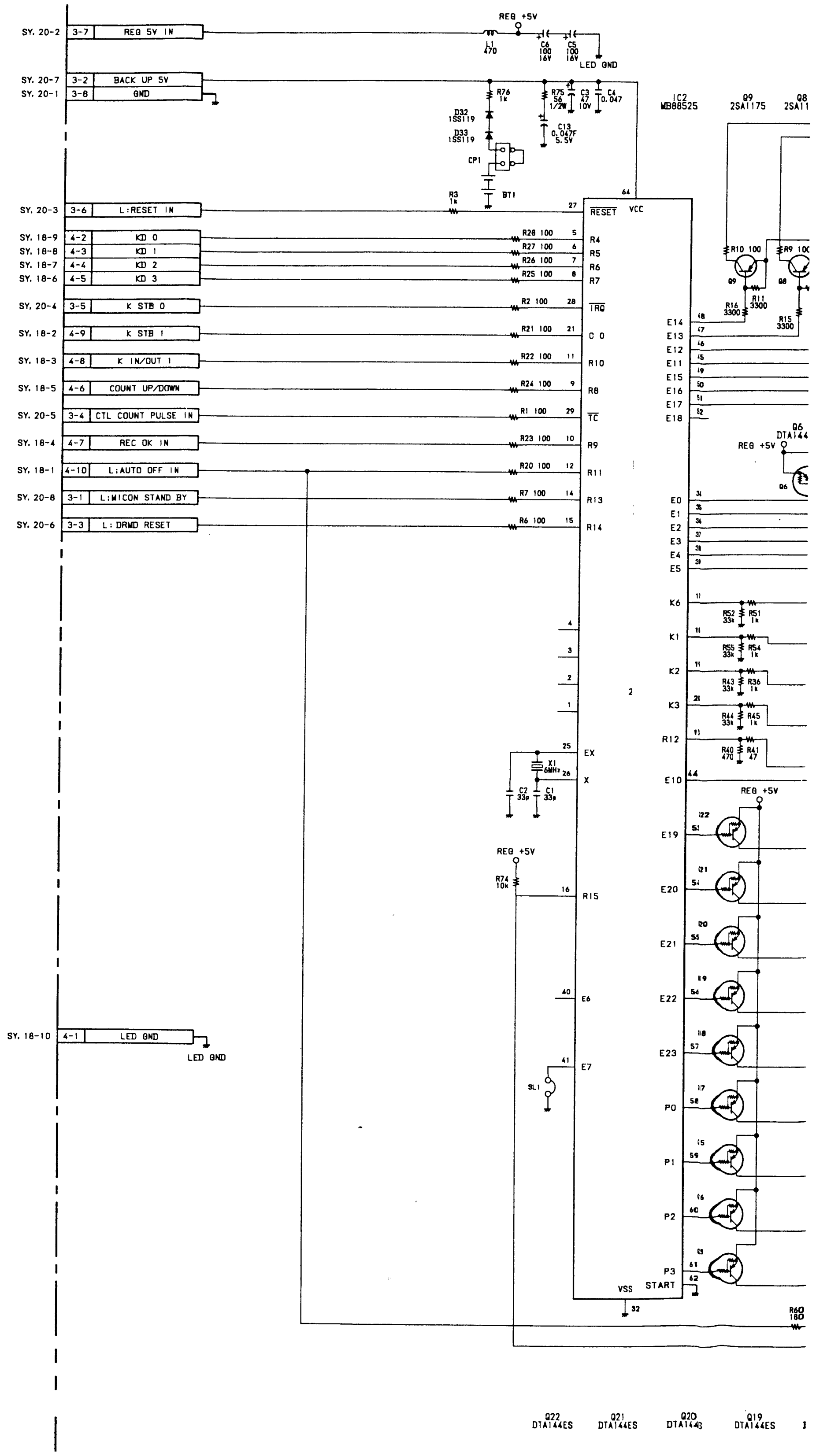

L201
C204
D201
T101
R108
Q102
C110
C111
C212
C203
R109
D101
R110
C206
R207
R107
C213
D202
Q101
R102
C108
C107
C205
C201
R101
C214
C202
R201
D203
C114
C106
R202
R111
Q104
R104
R103
L101
D206
D204
Q202
T102
C102
C207
D205
C209
L203
Q201
R204
R203
C210
R208
L204
R205
C109
R105
D208
R658
R659
R106
D651
R206
C651
C655
Q103
L205
C215
D652
R657
C216
D653
R209
C112
C105
R654
R212
R660
R661
C654
D210
C104
CN201
CN101
IC651
C113
C217
C103
C101
R651
R652
R653
R656
D209
RV651
C652
C653
R655
C211



UR-14 -SOLDERING SIDE-

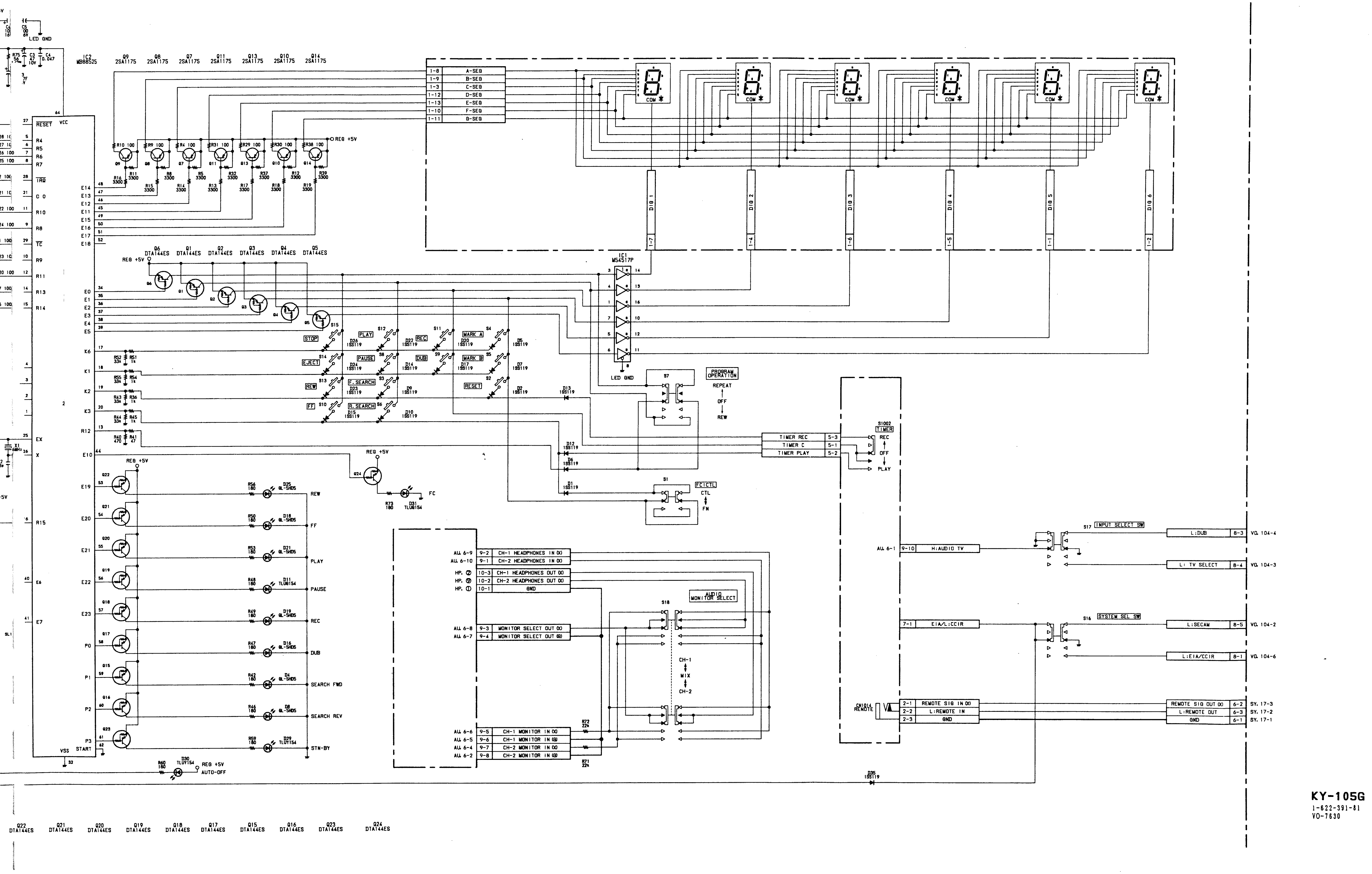
1-618-009-12
VO-7630

KY-105G:FUNCTION KEY/DISPLAY


SY. 20-2 3-7 REG 5V IN
SY. 20-7 3-2 BACK UP 5V
SY. 20-1 3-8 GND
SY. 20-3 3-6 L:RESET IN
SY. 18-9 4-2 KD 0
SY. 18-8 4-3 KD 1
SY. 18-7 4-4 KD 2
SY. 18-6 4-5 KD 3
SY. 20-4 3-5 K STB 0
SY. 18-2 4-9 K STB 1
SY. 18-3 4-8 K IN/OUT 1
SY. 18-5 4-6 COUNT UP/DOWN
SY. 20-5 3-4 CTL COUNT PULSE IN
SY. 18-4 4-7 REC OK IN
SY. 18-1 4-10 L:AUTO OFF IN
SY. 20-8 3-1 L:MICON STAND BY
SY. 20-6 3-3 L: DRMD RESET
SY. 18-10 4-1 LED GND
LED GND
REG +5V
IC2
MB88525
Q9
2SA1175
RESET
VCC
VSS
START
Q22
DTA144ES
Q21
DTA144ES
Q20
DTA144ES
Q19
DTA144ES

14-62

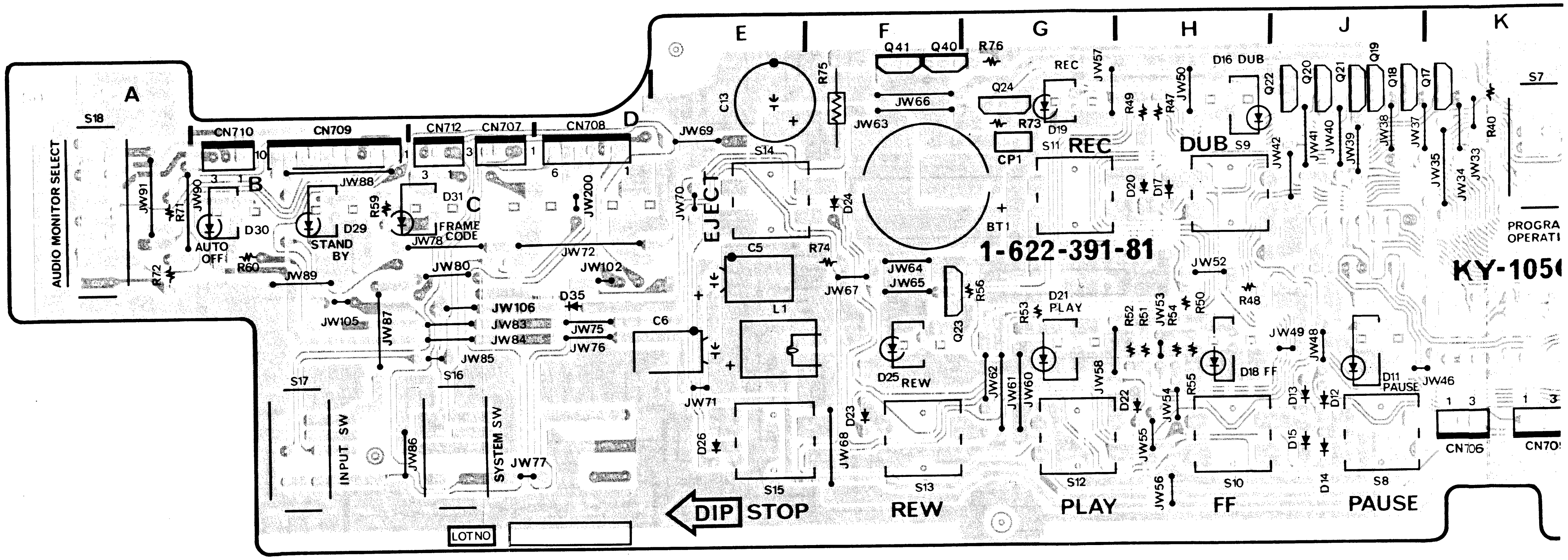
14-61

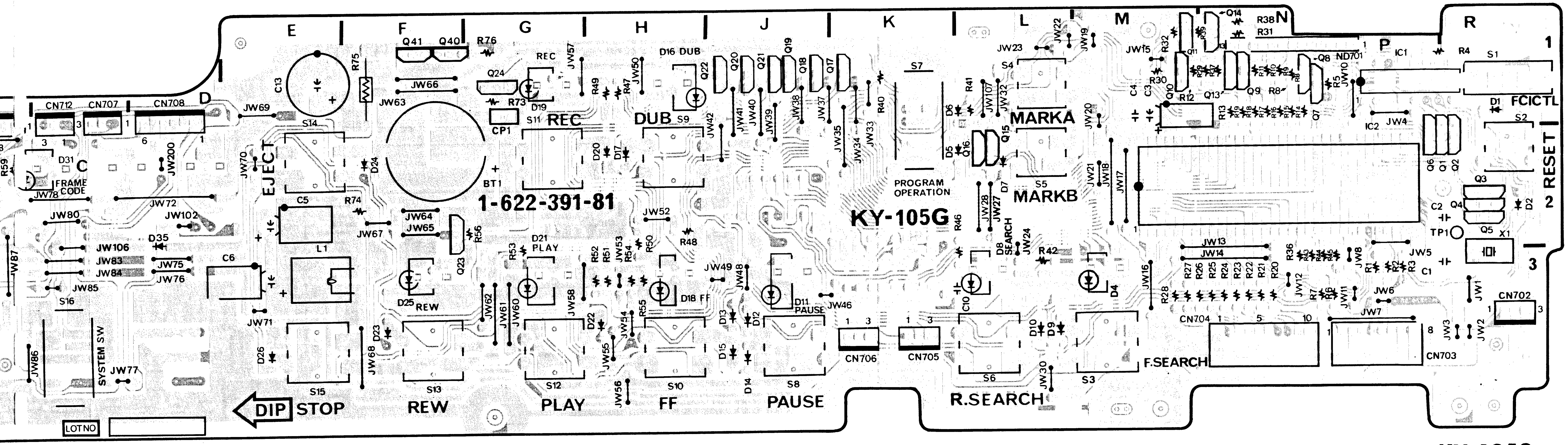

IC2 MB8852S
Q9 2SA1175
Q8 2SA1175
Q7 2SA1175
Q11 2SA1175
Q13 2SA1175
Q10 2SA1175
Q14 2SA1175
RESET
VCC
IRQ
VSS
START
REG +5V
LED GND
A-SEG
B-SEG
C-SEG
D-SEG
E-SEG
F-SEG
G-SEG
COM
DIG 1
DIG 2
DIG 3
DIG 4
DIG 5
DIG 6
IC1 M54517P
Q6 DTA144ES
Q1 DTA144ES
Q2 DTA144ES
Q3 DTA144ES
Q4 DTA144ES
Q5 DTA144ES
STOP
PLAY
REC
MARK A
EJECT
PAUSE
DUB
MARK B
REW
F.SEARCH
RESET
FF
R.SEARCH
PROGRAM OPERATION
REPEAT
OFF
TIMER REC
TIMER C
TIMER PLAY
S1002 TIMER
FC/CTL
CTL
FN
FC
REW
FF
PLAY
PAUSE
REC
DUB
SEARCH FWD
SEARCH REV
STN-BY
AUTO-OFF
CH-1 HEADPHONES IN (L)
CH-2 HEADPHONES IN (L)
CH-1 HEADPHONES OUT (L)
CH-2 HEADPHONES OUT (L)
GND
MONITOR SELECT OUT (L)
MONITOR SELECT OUT (R)
AUDIO MONITOR SELECT
CH-1
MIX
CH-2
CH-1 MONITOR IN (L)
CH-1 MONITOR IN (R)
CH-2 MONITOR IN (L)
CH-2 MONITOR IN (R)
H:AUDIO TV
INPUT SELECT SW
L:DUB
L: TV SELECT
EIA/L:CCIR
SYSTEM SEL SW
L:SECAM
L:EIA/CCIR
REMOTE
REMOTE SIG IN (I)
L:REMOTE IN
REMOTE SIG OUT (O)
L:REMOTE OUT
VQ 104-4
VQ 104-3
VQ 104-2
VQ 104-6
SY 17-3
SY 17-2
SY 17-1
KY-105G
1-622-391-81
VO-7630
Q22 DTA144ES
Q21 DTA144ES
Q20 DTA144ES
Q19 DTA144ES
Q18 DTA144ES
Q17 DTA144ES
Q15 DTA144ES
Q16 DTA144ES
Q23 DTA144ES
Q24 DTA144ES

KY-105G: FUNCTION KEY/DISPLAY

KY-105G (1-622-391-81)

BT1	F-2
CN702	R-3
CN703	P-3
CN704	N-3
CN705	K-3
CN706	K-3
CN707	C-1
CN708	D-1
CN709	B-1
CN710	B-1
CN712	C-1
D1	R-1
D2	R-2
D4	M-3
D5	L-2
D6	L-1
D7	L-2
D8	L-3
D9	L-3
D10	L-3
D11	J-3
D12	J-3
D13	J-3
D14	J-3
D15	J-3
D16	H-1
D17	H-2
D18	H-3
D19	G-1
D20	H-2
D21	G-3
D22	H-3
D23	F-3
D24	F-2
D25	F-3
D26	E-3
D29	B-2
D30	B-2
D31	C-2
D35	D-2
ND701	N-1
IC1	P-1
IC2	N-2
Q1	R-2
Q2	R-2
Q3	R-2
Q4	R-2
Q5	R-2
Q6	P-2
Q7	N-1
Q8	N-1
Q9	N-1
Q10	M-1
Q11	M-1
Q13	N-1
Q14	N-1
Q15	L-2
Q16	L-2
Q17	K-1
Q18	J-1
Q19	J-1
Q20	J-1
Q21	J-1
Q22	J-1
Q23	F-2
Q24	G-3
Q40	F-1
Q41	F-1
S1	R-1
S2	R-2
S3	M-3
S4	L-1
S5	L-2
S6	L-3
S7	K-1
S8	J-3
S9	H-2
S10	H-3
S11	G-2
S12	G-3
S13	F-3
S14	E-2
S15	E-3
S16	C-3
S17	B-3
S18	A-1
X1	R-3


A
B
C
D
E
F
G
H
J
K
AUDIO MONITOR SELECT
S18
CN710
CN709
CN712
CN707
CN708
AUTO OFF
STAND BY
FRAME CODE
INPUT SW
SYSTEM SW
S17
S16
EJECT
S14
S15
C13
C5
C6
L1
BT1
1-622-391-81
Q41
Q40
R76
Q24
CP1
REC
S11 REC
D16 DUB
DUB S9
D21 PLAY
D25 REW
D18 FF
D11 PAUSE
DIP STOP
REW
S13
PLAY
S12
FF
S10
PAUSE
S8
S7
CN706
PROGRA
OPERATI
KY-105
LOT NO


E
F
G
H
J
K
L
M
N
P
R
D
C
1
2
3
1-622-391-81
KY-105G
EJECT
STOP
REW
PLAY
FF
PAUSE
R.SEARCH
F.SEARCH
REC
DUB
MARKA
MARKB
PROGRAM OPERATION
RESET
FCICTL
FRAME CODE
SYSTEM SW
DIP
LOTNO
BT1
IC1
IC2
ND701
X1
TP1
L1
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
CN702
CN703
CN704
CN705
CN706
CN707
CN708
CN712
C1
C2
C3
C4
C5
C6
C10
C13
CP1
D1
D2
D4
D5
D6
D7
D8 SEARCH
D9
D10
D11 PAUSE
D12
D13
D14
D15
D16 DUB
D17
D18 FF
D19
D20
D21 PLAY
D22
D23
D24
D25 REW
D26
D31
D35
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q20
Q21
Q22
Q23
Q24
Q40
Q41
R4
R8
R12
R13
R28
R30
R31
R32
R38
R40
R41
R42
R46
R47
R48
R49
R50
R51
R52
R53
R54
R55
R56
R59
R73
R74
R75
R76
JW1
JW2
JW3
JW4
JW5
JW6
JW7
JW13
JW14
JW15
JW16
JW17
JW18
JW19
JW20
JW21
JW22
JW23
JW24
JW27
JW28
JW30
JW33
JW34
JW35
JW37
JW38
JW39
JW40
JW41
JW42
JW46
JW48
JW49
JW50
JW52
JW53
JW54
JW55
JW56
JW57
JW58
JW60
JW61
JW62
JW63
JW64
JW65
JW66
JW67
JW68
JW69
JW70
JW71
JW72
JW75
JW76
JW77
JW78
JW80
JW83
JW84
JW85
JW86
JW87
JW102
JW106
JW107
JW200

KY-105G

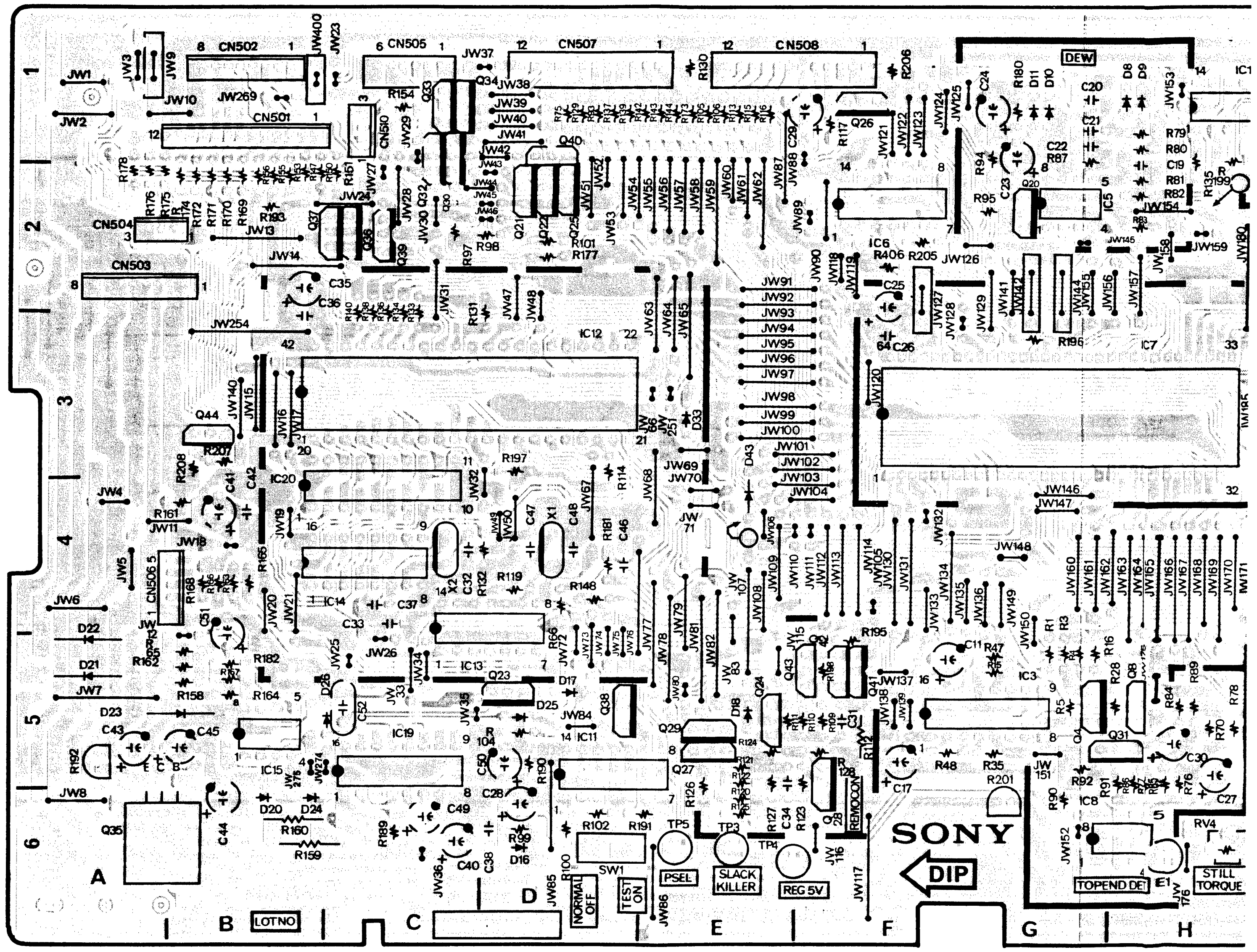
-COMPONENT SIDE-

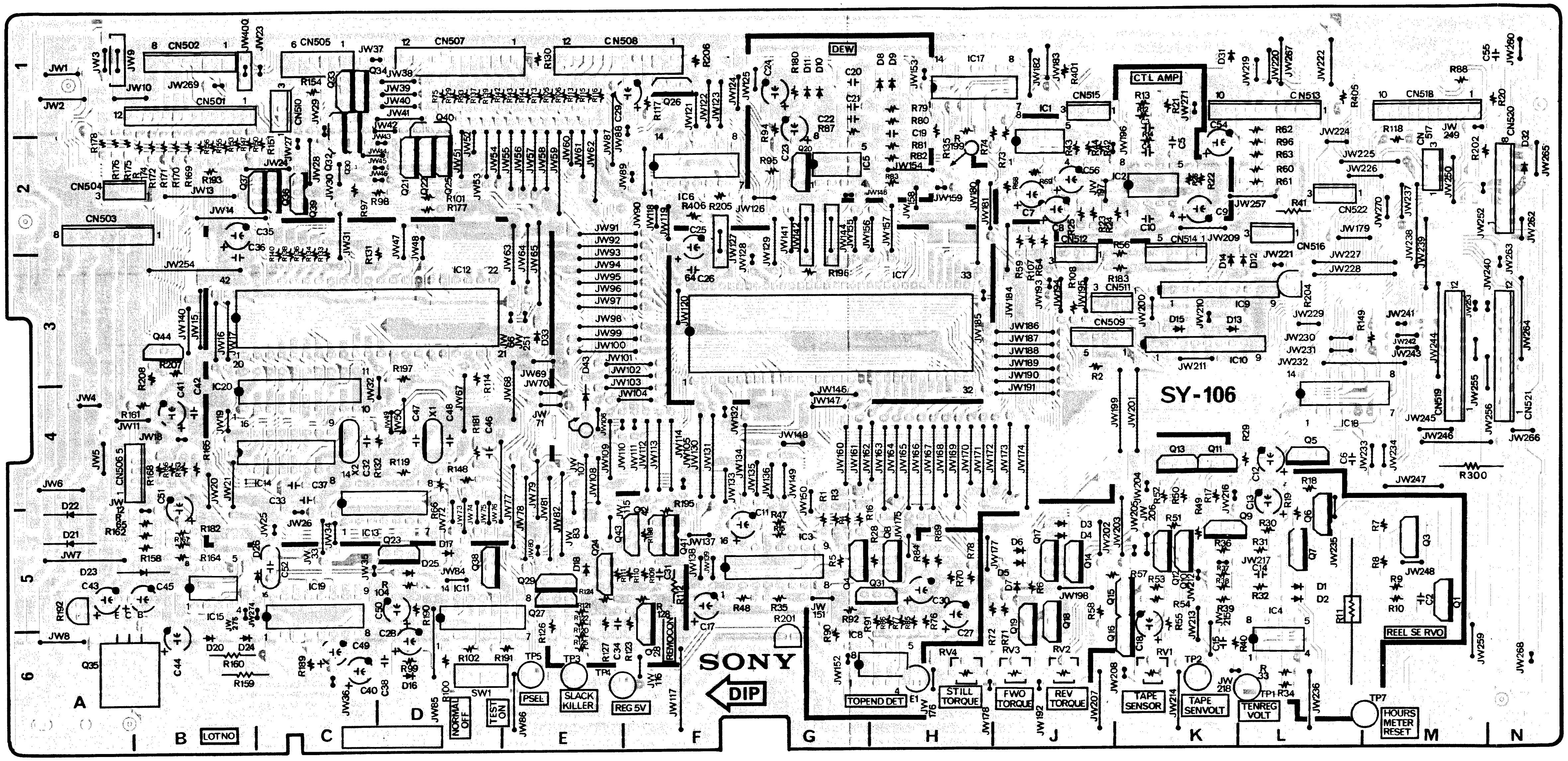
1-622-391-81
V0-7630

SY-106(1):SYSTEM CONTROL

SY-106 (1-622-389-13)

CN501	B-1
CN502	B-1
CN503	A-2
CN504	A-2
CN505	C-1
CN506	B-4
CN507	D-1
CN508	E-1
CN509	J-3
CN510	C-1
CN511	J-3
CN512	J-3
CN513	L-1
CN514	K-3
CN515	J-1
CN516	L-2
CN517	M-2
CN518	M-1
CN519	M-3
CN520	N-2
CN521	N-3
CN522	L-2
D1	L-5
D2	L-5
D3	J-5
D4	J-5
D5	J-5
D6	J-5
D7	J-5
D8	H-1
D9	H-1
D10	G-1
D11	G-1
D12	L-3
D13	K-3
D14	K-3
D15	K-3
D16	D-6
D17	D-5
D18	E-5
D20	B-6
D21	A-5
D22	A-5
D23	B-5
D24	B-6
D25	D-5
D26	C-5
D31	K-1
D32	N-2
D33	E-3
D43	E-4
E1	H-6
IC1	J-2
IC2	K-2
IC3	G-5
IC4	L-6
IC5	G-2
IC6	F-2
IC7	G-3
IC8	H-6
IC9	K-3
IC10	K-3
IC11	D-5
IC12	D-3
IC13	D-4
IC14	C-4
IC15	B-5
IC17	H-1
IC18	L-4
IC19	C-5
IC20	C-4
Q1	M-5
Q3	M-5
Q4	G-5
Q5	L-4
Q6	L-5
Q7	L-5
Q8	H-5
Q9	K-5
Q10	K-5
Q11	K-4
Q12	K-5
Q13	K-4
Q14	J-5
Q15	K-5
Q16	K-6
Q17	J-5
Q18	J-5
Q19	J-5
Q20	G-2
Q21	D-2
Q22	D-2
Q23	D-5
Q24	E-5
Q25	D-2
Q26	F-1
Q27	E-5
Q28	F-5
Q29	E-5
Q30	C-1
Q31	H-5
Q32	C-1
Q33	C-1
Q34	C-1
Q35	A-6
Q36	C-2
Q37	C-2
Q38	D-5
Q39	C-2
Q40	D-1
Q41	F-5
Q42	F-5
Q43	F-5
Q44	B-3
RV1	K-6
RV2	J-6
RV3	J-6
RV4	H-6
SW1	D-6
TP1	L-6
TP2	K-6
TP3	E-6
TP4	E-6
TP5	E-6
TP7	M-6
X1	D-4
X2	C-4


CN502
CN505
CN507
CN508
CN501
CN503
CN504
CN506
DEW
IC5
IC6
IC7
IC12
IC20
IC14
IC13
IC19
IC15
IC11
IC3
IC8
SW1
TP5
TP3
PSEL
SLACK KILLER
REG 5V
REMOCON
NORMAL OFF
TEST ON
LOTNO
SONY
DIP
TOPEND DET
STILL TORQUE
RV4
A
B
C
D
E
F
G
H
1
2
3
4
5
6

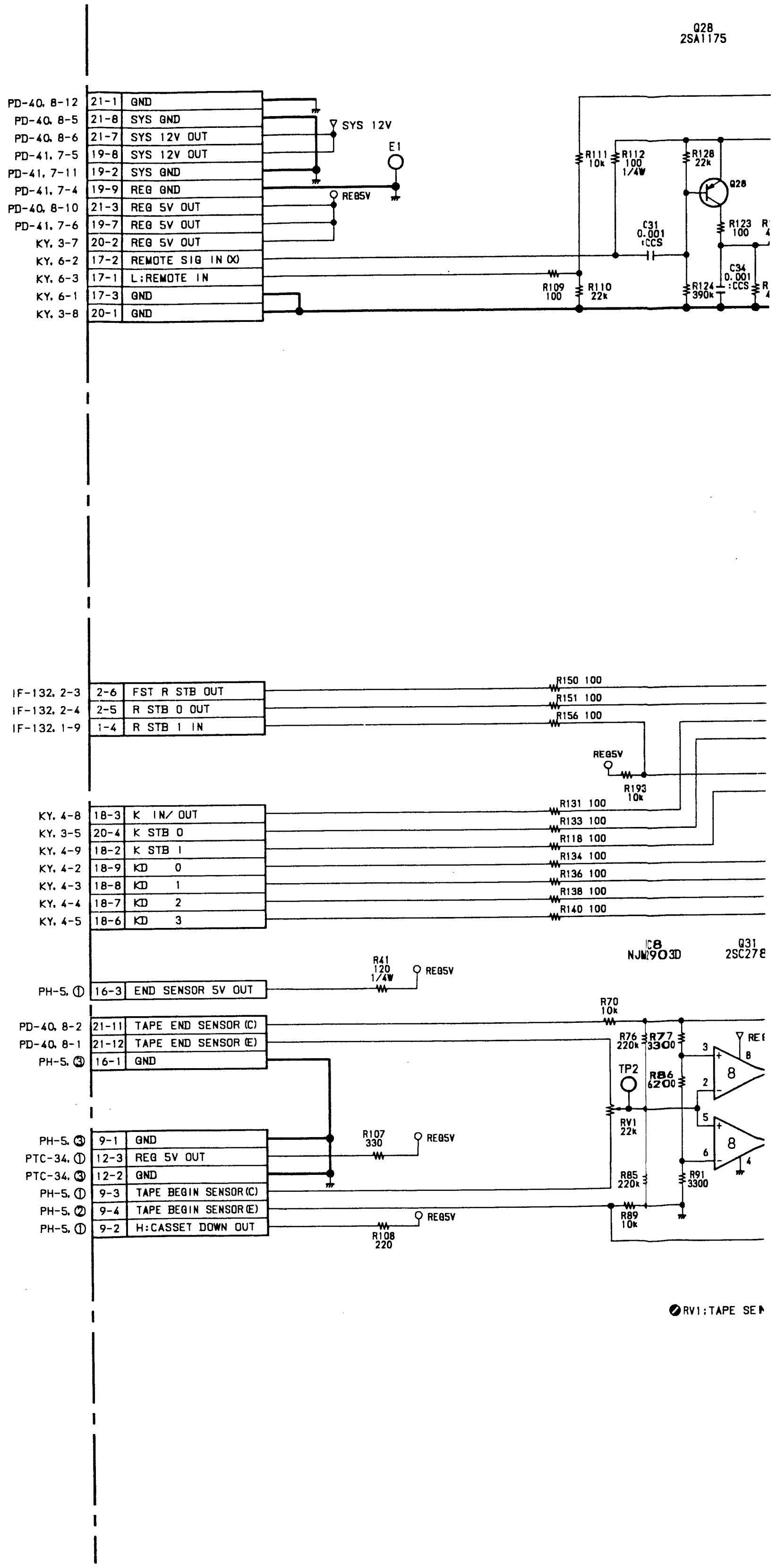

SY-106
SONY
DIP
CN501
CN502
CN503
CN504
CN505
CN506
CN507
CN508
CN509
CN510
CN511
CN512
CN513
CN514
CN515
CN516
CN517
CN518
CN519
CN520
CN521
CN522
IC1
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC17
IC18
IC19
IC20
IC21
DEW
CTL AMP
REEL SE RVO
TP1
TP2
TP3
TP4
TP5
TP7
PSEL
SLACK KILLER
REG 5V
TOPEND DET
STILL TORQUE
FWO TORQUE
REV TORQUE
TAPE SENSOR
TAPE SENVOLT
TENREG VOLT
HOURS METER RESET
NORMAL OFF
TEST ON
SW1
LOT NO
RV1
RV2
RV3
RV4
A
B
C
D
E
F
G
H
J
K
L
M
N
1
2
3
4
5
6

SY-106(1)

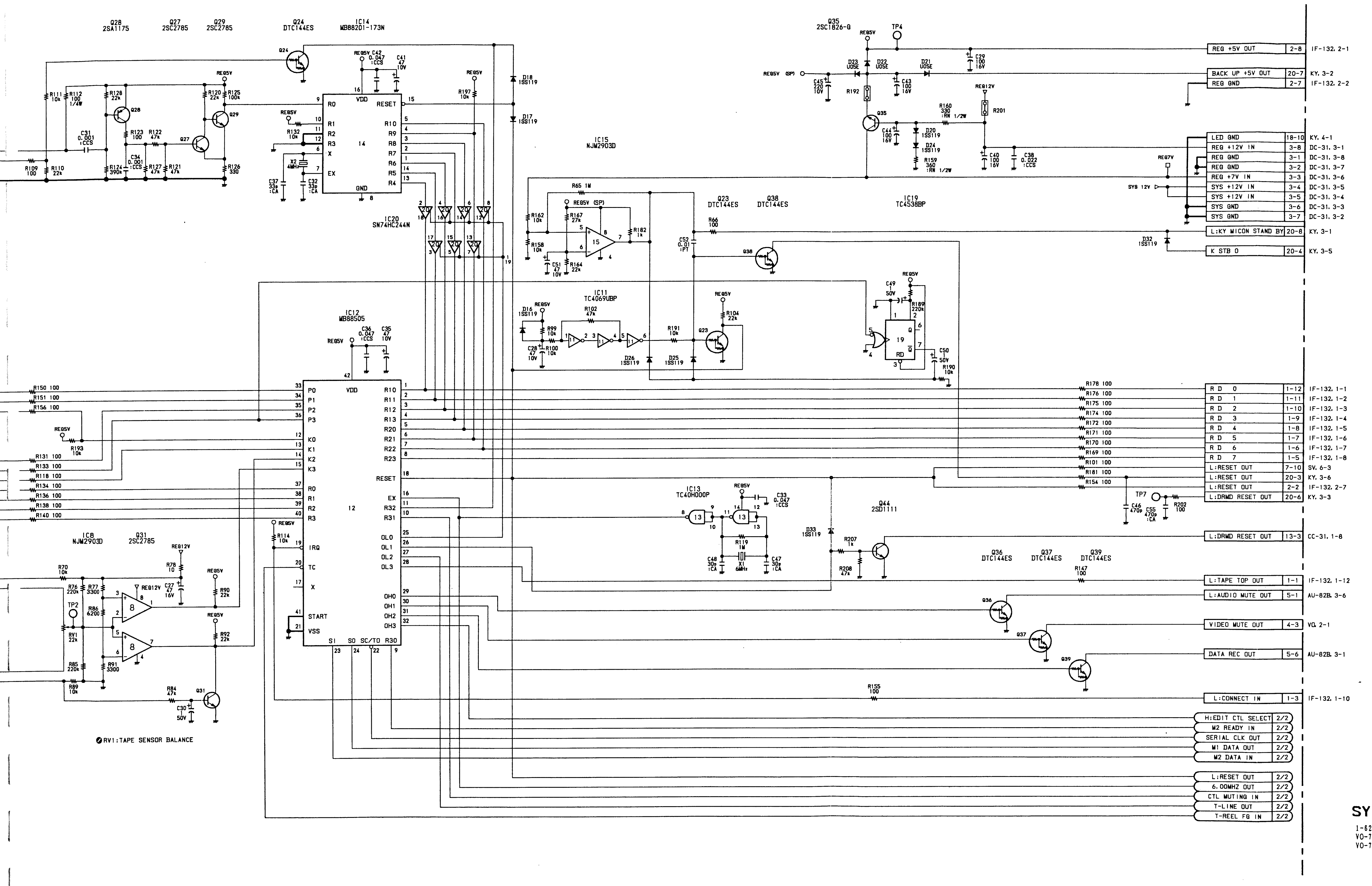
-COMPONENT SIDE-

1-622-389-13
VO-7600
VO-7630

SY-106(1)(1/2):SYSTEM CONTROL


Q28
2SA1175
PD-40, 8-12
21-1
GND
PD-40, 8-5
21-8
SYS GND
PD-40, 8-6
21-7
SYS 12V OUT
PD-41, 7-5
19-8
SYS 12V OUT
PD-41, 7-11
19-2
SYS GND
PD-41, 7-4
19-9
REG GND
PD-40, 8-10
21-3
REG 5V OUT
PD-41, 7-6
19-7
REG 5V OUT
KY, 3-7
20-2
REG 5V OUT
KY, 6-2
17-2
REMOTE SIG IN (X)
KY, 6-3
17-1
L:REMOTE IN
KY, 6-1
17-3
GND
KY, 3-8
20-1
GND
SYS 12V
E1
REG5V
R111 10k
R112 100 1/4W
R128 22k
Q28
C31 0.001 :CCS
R123 100
C34 0.001 :CCS
R109 100
R110 22k
R124 390k
IF-132, 2-3
2-6
FST R STB OUT
IF-132, 2-4
2-5
R STB 0 OUT
IF-132, 1-9
1-4
R STB 1 IN
R150 100
R151 100
R156 100
REG5V
R193 10k
KY, 4-8
18-3
K IN/ OUT
KY, 3-5
20-4
K STB 0
KY, 4-9
18-2
K STB 1
KY, 4-2
18-9
KD 0
KY, 4-3
18-8
KD 1
KY, 4-4
18-7
KD 2
KY, 4-5
18-6
KD 3
R131 100
R133 100
R118 100
R134 100
R136 100
R138 100
R140 100
IC8
NJM2903D
Q31
2SC278
PH-5, ①
16-3
END SENSOR 5V OUT
R41 120 1/4W
REG5V
PD-40, 8-2
21-11
TAPE END SENSOR (C)
PD-40, 8-1
21-12
TAPE END SENSOR (E)
PH-5, ③
16-1
GND
R70 10k
R76 220k
R77 3300
R86 6200
TP2
RV1 22k
R85 220k
R91 3300
R89 10k
3
2
5
6
8
4
PH-5, ③
9-1
GND
PTC-34, ①
12-3
REG 5V OUT
PTC-34, ③
12-2
GND
PH-5, ①
9-3
TAPE BEGIN SENSOR (C)
PH-5, ②
9-4
TAPE BEGIN SENSOR (E)
PH-5, ①
9-2
H:CASSET DOWN OUT
R107 330
REG5V
R108 220
REG5V
RV1:TAPE SE

14-71


Q28 2SA1175
Q27 2SC2785
Q29 2SC2785
Q24 DTC144ES
IC14 MB88201-173N
IC20 SN74HC244N
IC12 MB88505
IC15 NJM2903D
IC11 TC4069UBP
IC13 TC40H000P
IC19 TC4538BP
IC8 NJM2903D
Q31 2SC2785
Q35 2SC1826-Q
Q23 DTC144ES
Q38 DTC144ES
Q44 2SD1111
Q36 DTC144ES
Q37 DTC144ES
Q39 DTC144ES
REG +5V OUT 2-8 IF-132, 2-1
BACK UP +5V OUT 20-7 KY, 3-2
REG GND 2-7 IF-132, 2-2
LED GND 18-10 KY, 4-1
REG +12V IN 3-8 DC-31, 3-1
REG GND 3-1 DC-31, 3-8
REG GND 3-2 DC-31, 3-7
REG +7V IN 3-3 DC-31, 3-6
SYS +12V IN 3-4 DC-31, 3-5
SYS +12V IN 3-5 DC-31, 3-4
SYS GND 3-6 DC-31, 3-3
SYS GND 3-7 DC-31, 3-2
L:KY MICON STAND BY 20-8 KY, 3-1
K STB 0 20-4 KY, 3-5
R D 0 1-12 IF-132, 1-1
R D 1 1-11 IF-132, 1-2
R D 2 1-10 IF-132, 1-3
R D 3 1-9 IF-132, 1-4
R D 4 1-8 IF-132, 1-5
R D 5 1-7 IF-132, 1-6
R D 6 1-6 IF-132, 1-7
R D 7 1-5 IF-132, 1-8
L:RESET OUT 7-10 SV, 6-3
L:RESET OUT 20-3 KY, 3-6
L:RESET OUT 2-2 IF-132, 2-7
L:DRMD RESET OUT 20-6 KY, 3-3
L:DRMD RESET OUT 13-3 CC-31, 1-8
L:TAPE TOP OUT 1-1 IF-132, 1-12
L:AUDIO MUTE OUT 5-1 AU-82B, 3-6
VIDEO MUTE OUT 4-3 VO, 2-1
DATA REC OUT 5-6 AU-82B, 3-1
L:CONNECT IN 1-3 IF-132, 1-10
H:EDIT CTL SELECT 2/2
M2 READY IN 2/2
SERIAL CLK OUT 2/2
M1 DATA OUT 2/2
M2 DATA IN 2/2
L:RESET OUT 2/2
6.00MHZ OUT 2/2
CTL MUTING IN 2/2
T-LINE OUT 2/2
T-REEL FG IN 2/2
TP2
TP4
TP7
SYS 12V
REG5V
REG12V
REG7V

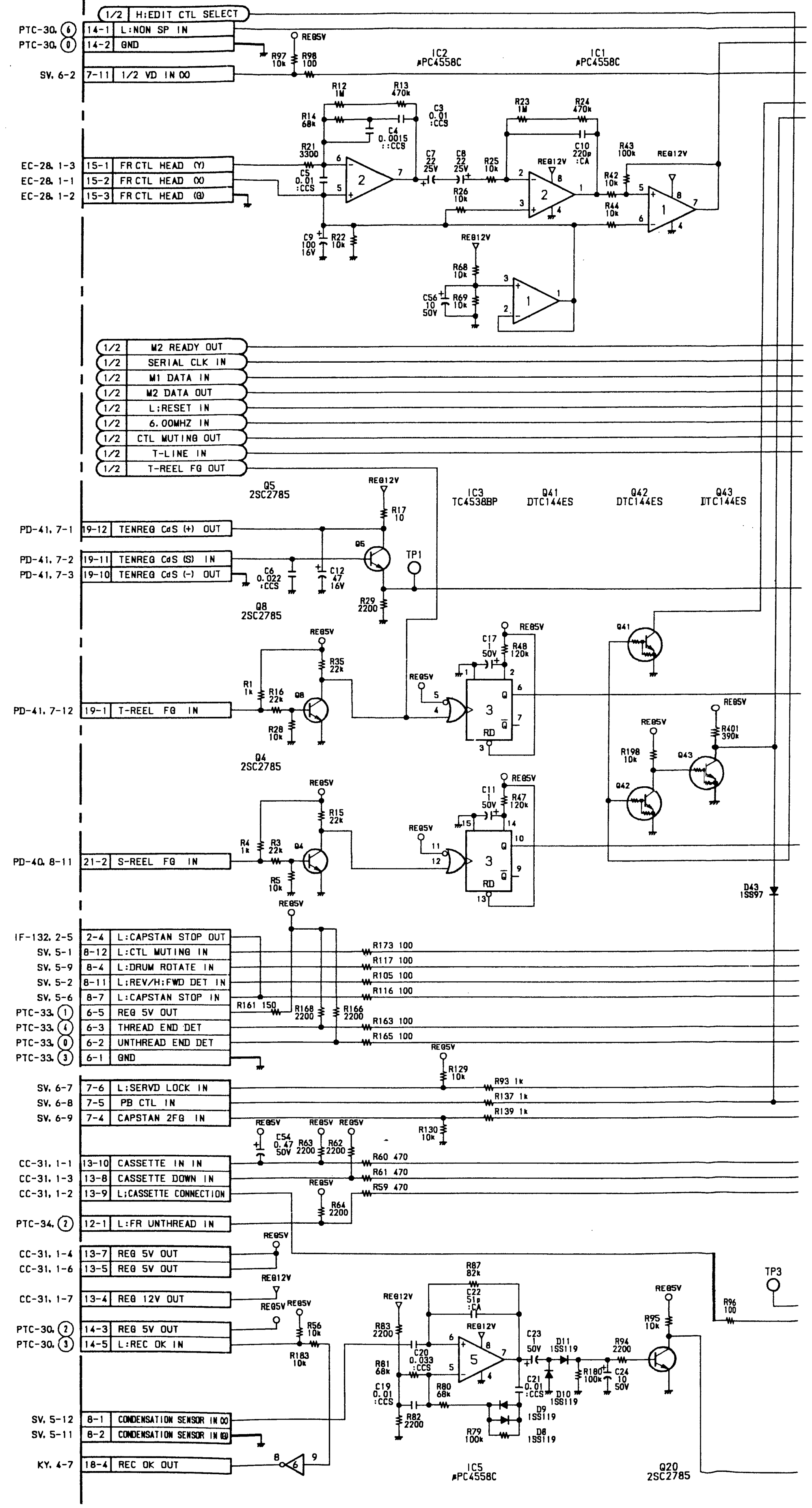
●RV1:TAPE SENSOR BALANCE

SY-106(1) (1/2)

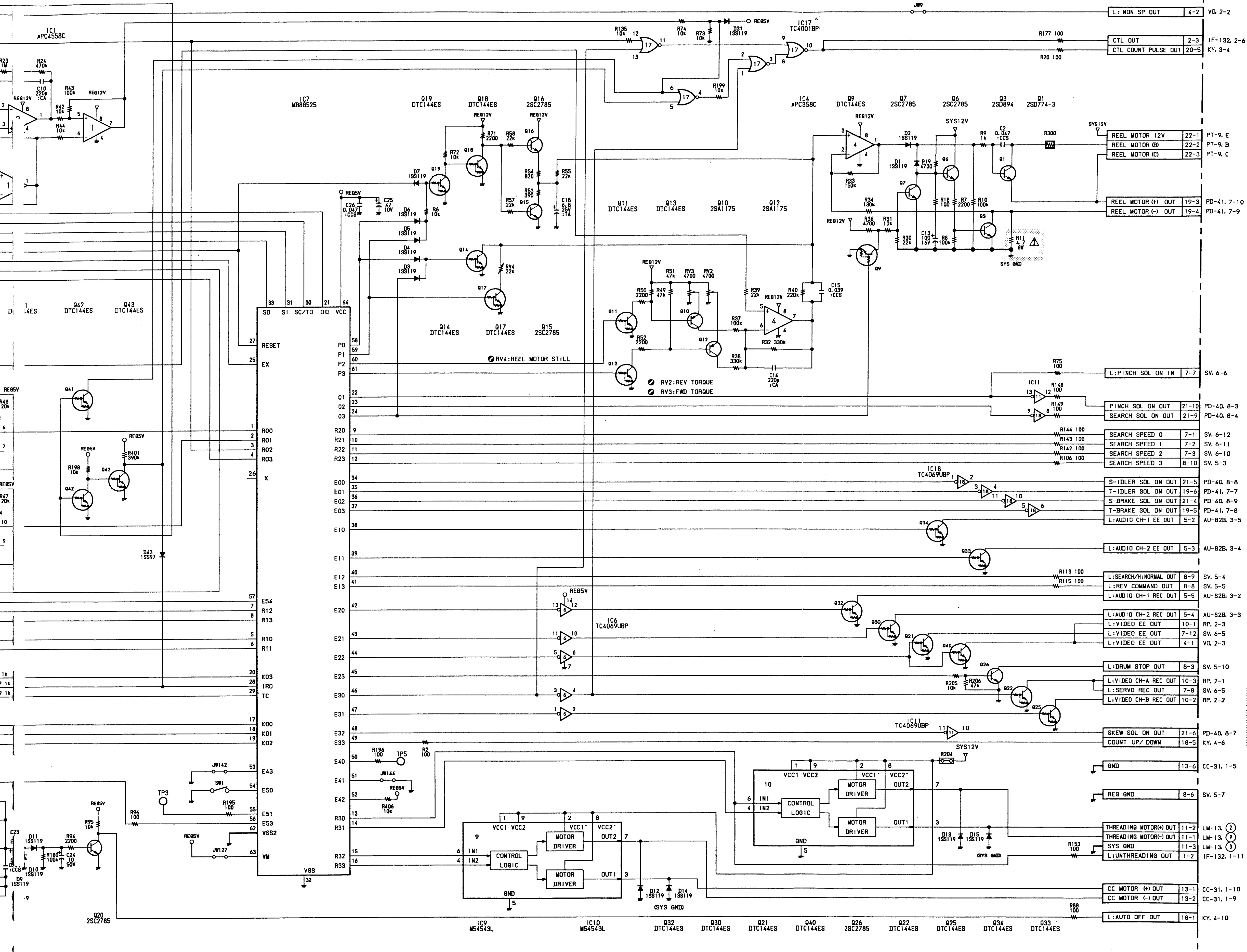
1-622-389-13
VO-7600
VO-7630

14-78

SY-106(1)(2/2):SYSTEM CONTROL


1/2 H:EDIT CTL SELECT
PTC-30 ④ 14-1 L:NON SP IN
PTC-30 ⑧ 14-2 GND
SV. 6-2 7-11 1/2 VD IN 00
IC2 μPC4558C
IC1 μPC4558C
EC-28. 1-3 15-1 FR CTL HEAD (Y)
EC-28. 1-1 15-2 FR CTL HEAD (X)
EC-28. 1-2 15-3 FR CTL HEAD (G)
M2 READY OUT
SERIAL CLK IN
M1 DATA IN
M2 DATA OUT
L:RESET IN
6.00MHZ IN
CTL MUTING OUT
T-LINE IN
T-REEL FG OUT
Q5 2SC2785
IC3 TC4538BP
Q41 DTC144ES
Q42 DTC144ES
Q43 DTC144ES
PD-41. 7-1 19-12 TENREG C&S (+) OUT
PD-41. 7-2 19-11 TENREG C&S (S) IN
PD-41. 7-3 19-10 TENREG C&S (-) OUT
TP1
Q8 2SC2785
PD-41. 7-12 19-1 T-REEL FG IN
Q4 2SC2785
PD-40. 8-11 21-2 S-REEL FG IN
D43 1SS97
IF-132. 2-5 2-4 L:CAPSTAN STOP OUT
SV. 5-1 8-12 L:CTL MUTING IN
SV. 5-9 8-4 L:DRUM ROTATE IN
SV. 5-2 8-11 L:REV/H:FWD DET IN
SV. 5-6 8-7 L:CAPSTAN STOP IN
PTC-33 ① 6-5 REG 5V OUT
PTC-33 ④ 6-3 THREAD END DET
PTC-33 ⑥ 6-2 UNTHREAD END DET
PTC-33 ③ 6-1 GND
SV. 6-7 7-6 L:SERVO LOCK IN
SV. 6-8 7-5 PB CTL IN
SV. 6-9 7-4 CAPSTAN 2FG IN
CC-31. 1-1 13-10 CASSETTE IN IN
CC-31. 1-3 13-8 CASSETTE DOWN IN
CC-31. 1-2 13-9 L:CASSETTE CONNECTION
PTC-34 ② 12-1 L:FR UNTHREAD IN
CC-31. 1-4 13-7 REG 5V OUT
CC-31. 1-6 13-5 REG 5V OUT
CC-31. 1-7 13-4 REG 12V OUT
PTC-30 ② 14-3 REG 5V OUT
PTC-30 ③ 14-5 L:REC OK IN
SV. 5-12 8-1 CONDENSATION SENSOR IN (X)
SV. 5-11 8-2 CONDENSATION SENSOR IN (G)
KY. 4-7 18-4 REC OK OUT
TP3
IC5 μPC4558C
Q20 2SC2785

14-79

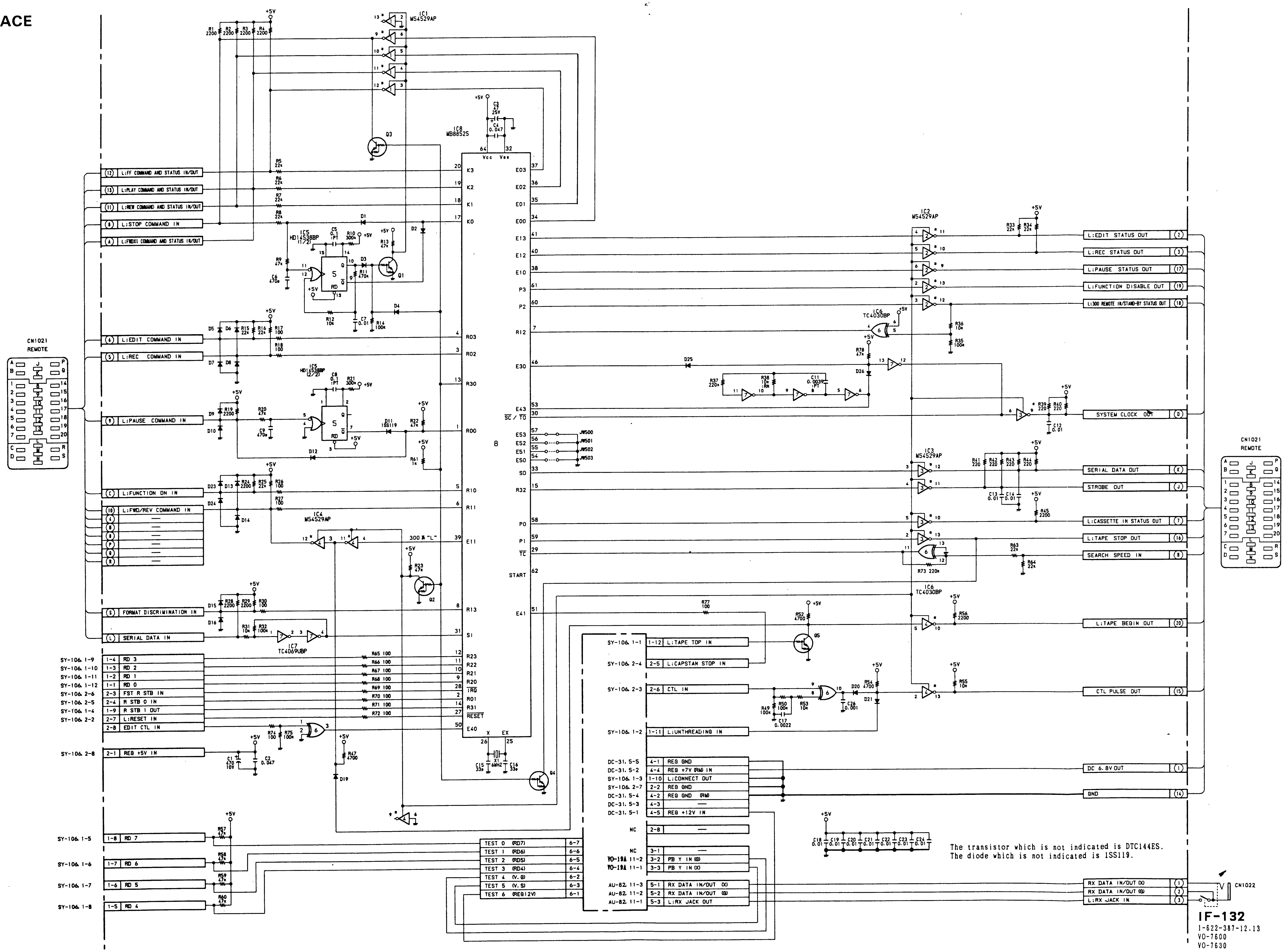

IC7
MB88525
IC1
μPC4558C
IC17
TC4001BP
IC4
μPC358C
IC6
TC4069UBP
IC18
TC4069UBP
IC11
TC4069UBP
IC9
M54543L
IC10
M54543L
RV4:REEL MOTOR STILL
RV2:REV TORQUE
RV3:FWD TORQUE
L:NON SP OUT 4-2 VO 2-2
CTL OUT 2-3 IF-132, 2-6
CTL COUNT PULSE OUT 20-5 KY, 3-4
REEL MOTOR 12V 22-1 PT-9, E
REEL MOTOR (B) 22-2 PT-9, B
REEL MOTOR (C) 22-3 PT-9, C
REEL MOTOR (+) OUT 19-3 PD-41, 7-10
REEL MOTOR (-) OUT 19-4 PD-41, 7-9
L:PINCH SOL ON IN 7-7 SV, 6-6
PINCH SOL ON OUT 21-10 PD-40, 8-3
SEARCH SOL ON OUT 21-9 PD-40, 8-4
SEARCH SPEED 0 7-1 SV, 6-12
SEARCH SPEED 1 7-2 SV, 6-11
SEARCH SPEED 2 7-3 SV, 6-10
SEARCH SPEED 3 8-10 SV, 5-3
S-IDLER SOL ON OUT 21-5 PD-40, 8-8
T-IDLER SOL ON OUT 19-6 PD-41, 7-7
S-BRAKE SOL ON OUT 21-4 PD-40, 8-9
T-BRAKE SOL ON OUT 19-5 PD-41, 7-8
L:AUDIO CH-1 EE OUT 5-2 AU-82B, 3-5
L:AUDIO CH-2 EE OUT 5-3 AU-82B, 3-4
L:SEARCH/H:NORMAL OUT 8-9 SV, 5-4
L:REV COMMAND OUT 8-8 SV, 5-5
L:AUDIO CH-1 REC OUT 5-5 AU-82B, 3-2
L:AUDIO CH-2 REC OUT 5-4 AU-82B, 3-3
L:VIDEO EE OUT 10-1 RP, 2-3
L:VIDEO EE OUT 7-12 SV, 6-5
L:VIDEO EE OUT 4-1 VO, 2-3
L:DRUM STOP OUT 8-3 SV, 5-10
L:VIDEO CH-A REC OUT 10-3 RP, 2-1
L:SERVO REC OUT 7-8 SV, 6-5
L:VIDEO CH-B REC OUT 10-2 RP, 2-2
SKEW SOL ON OUT 21-6 PD-40, 8-7
COUNT UP/DOWN 18-5 KY, 4-6
GND 13-6 CC-31, 1-5
REG GND 8-6 SV, 5-7
THREADING MOTOR(+) OUT 11-2 LM-13, ②
THREADING MOTOR(-) OUT 11-1 LM-13, ⑨
SYS GND 11-3 LM-13, ⓪
L:UNTHREADING OUT 1-2 IF-132, 1-11
CC MOTOR (+) OUT 13-1 CC-31, 1-10
CC MOTOR (-) OUT 13-2 CC-31, 1-9
L:AUTO OFF OUT 18-1 KY, 4-10
CONTROL LOGIC
MOTOR DRIVER
SYS GND

NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

SY-106(1) (2/2)
1-622-389-13
VO-7600
VO-7630

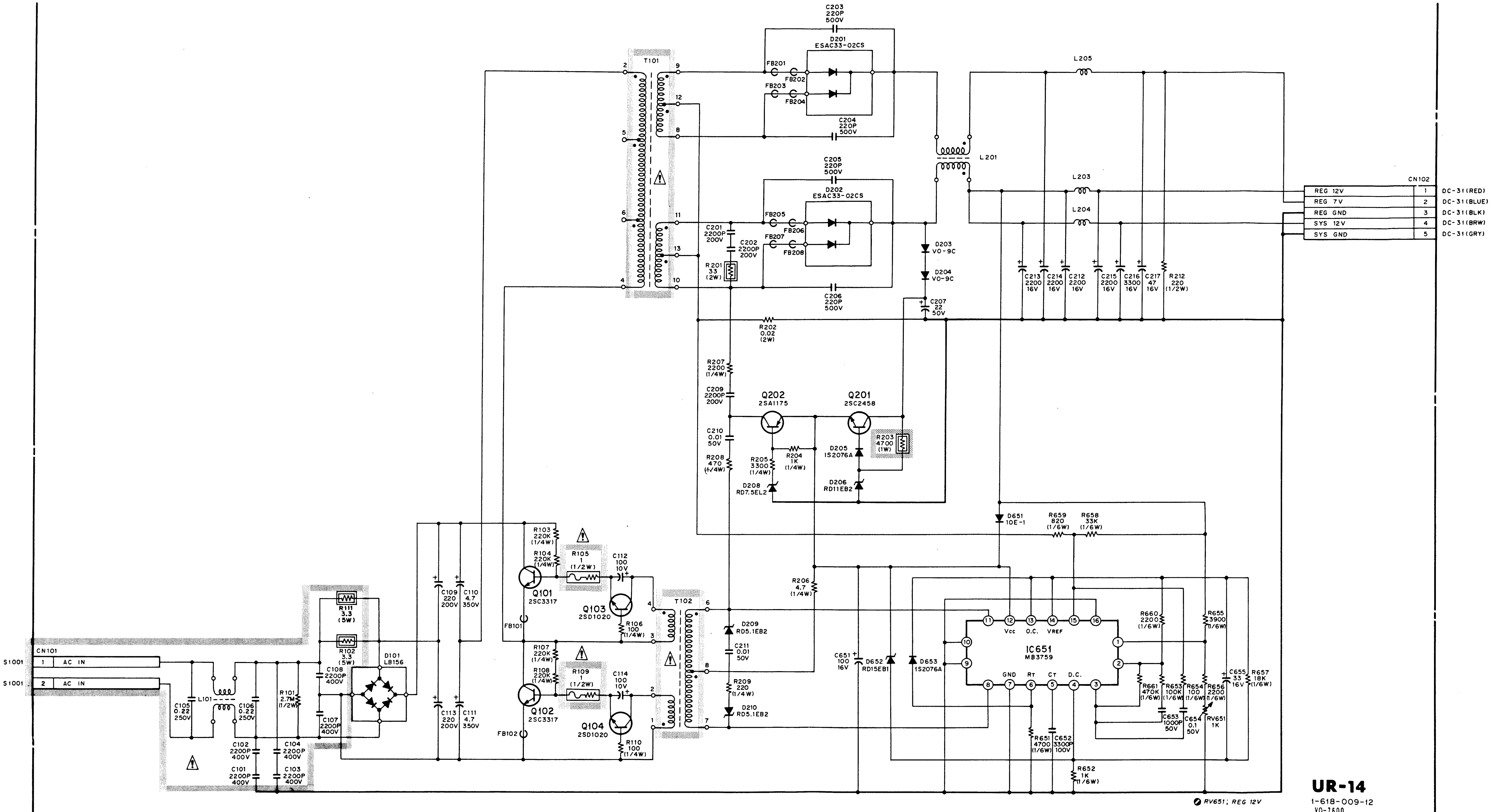
IF-132:33P INTERFACE


CN1021
REMOTE
IC1 M54529AP
IC2 M54529AP
IC3 M54529AP
IC4 M54529AP
IC5 HD14538BP (1/2)
IC5 HD14538BP (2/2)
IC6 TC4030BP
IC7 TC4069UBP
IC8 MB88525
+5V
L:FF COMMAND AND STATUS IN/OUT
L:PLAY COMMAND AND STATUS IN/OUT
L:REW COMMAND AND STATUS IN/OUT
L:STOP COMMAND IN
L:FWDX1 COMMAND AND STATUS IN/OUT
L:EDIT COMMAND IN
L:REC COMMAND IN
L:PAUSE COMMAND IN
L:FUNCTION ON IN
L:FWD/REV COMMAND IN
FORMAT DISCRIMINATION IN
SERIAL DATA IN
L:EDIT STATUS OUT
L:REC STATUS OUT
L:PAUSE STATUS OUT
L:FUNCTION DISABLE OUT
L:300 REMOTE IN/STAND-BY STATUS OUT
SYSTEM CLOCK OUT
SERIAL DATA OUT
STROBE OUT
L:CASSETTE IN STATUS OUT
L:TAPE STOP OUT
SEARCH SPEED IN
L:TAPE BEGIN OUT
CTL PULSE OUT
DC 6.8V OUT
GND
RX DATA IN/OUT (R)
RX DATA IN/OUT (B)
L:RX JACK IN
CN1022
SY-106 1-9
SY-106 1-10
SY-106 1-11
SY-106 1-12
SY-106 2-6
SY-106 2-5
SY-106 1-4
SY-106 2-2
SY-106 2-8
RD 3
RD 2
RD 1
RD 0
FST R STB IN
R STB 0 IN
R STB 1 OUT
L:RESET IN
EDIT CTL IN
REG +5V IN
SY-106 1-5
SY-106 1-6
SY-106 1-7
SY-106 1-8
RD 7
RD 6
RD 5
RD 4
TEST 0 (RD7)
TEST 1 (RD6)
TEST 2 (RD5)
TEST 3 (RD4)
TEST 4 (V.B)
TEST 5 (V.S)
TEST 6 (REG12V)
SY-106 1-1
L:TAPE TOP IN
SY-106 2-4
L:CAPSTAN STOP IN
SY-106 2-3
CTL IN
SY-106 1-2
L:UNTHREADING IN
DC-31 5-5
REG GND
DC-31 5-2
REG +7V IN
SY-106 1-3
L:CONNECT OUT
SY-106 2-7
REG GND
DC-31 5-4
REG GND (R)
DC-31 5-3
DC-31 5-1
REG +12V IN
NC
VO-19A 11-2
PB Y IN (B)
VO-19A 11-1
PB Y IN (R)
AU-82 11-3
AU-82 11-2
AU-82 11-1
300 Ж "L"
X1 6MHz
JW500
JW501
JW502
JW503
Q1
Q2
Q3
Q4
Q5
IF-132
1-622-387-12.13
VO-7600
VO-7630

The transistor which is not indicated is DTC144ES.
The diode which is not indicated is 1SS119.

33/34

UR-14:SWITCHING REGULATOR (FOR UC)

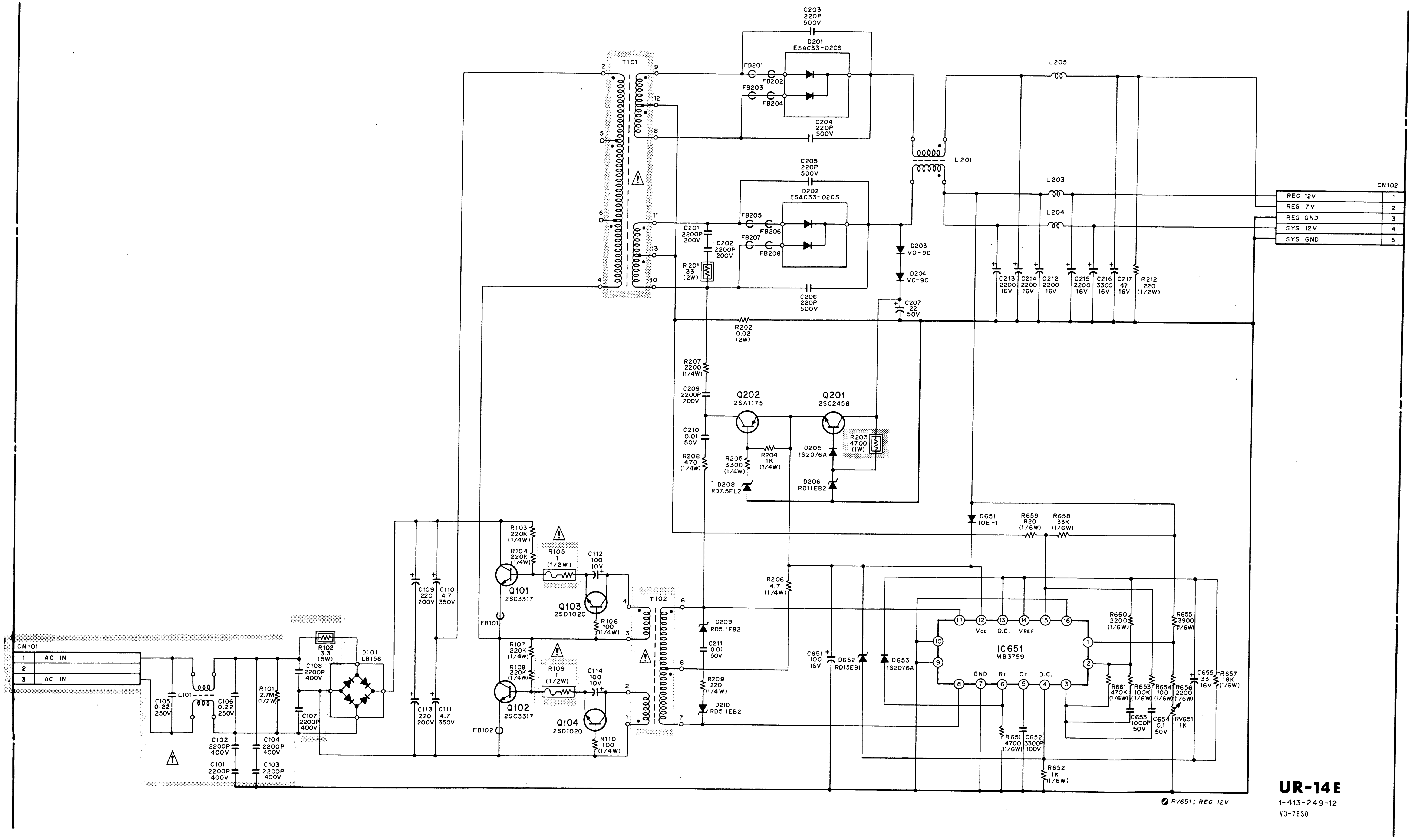

T101
C203 220P 500V
D201 ESAC33-02CS
FB201
FB202
FB203
FB204
C204 220P 500V
C205 220P 500V
D202 ESAC33-02CS
FB205
FB206
FB207
FB208
C201 2200P 200V
C202 2200P 200V
R201 33 (2W)
C206 220P 500V
D203 VO-9C
D204 VO-9C
C207 22 50V
L205
L201
L203
L204
C213 2200 16V
C214 2200 16V
C212 2200 16V
C215 2200 16V
C216 3300 16V
C217 47 16V
R212 220 (1/2W)
CN102
REG 12V
REG 7V
REG GND
SYS 12V
SYS GND
DC-31(RED)
DC-31(BLUE)
DC-31(BLK)
DC-31(BRW)
DC-31(GRY)
R202 0.02 (2W)
R207 2200 (1/4W)
C209 2200P 200V
C210 0.01 50V
R208 470 (1/4W)
Q202 2SA1175
Q201 2SC2458
R205 3300 (1/4W)
R204 1K (1/4W)
D205 1S2076A
R203 4700 (1W)
D208 RD7.5EL2
D206 RD11EB2
D651 10E-1
R659 820 (1/6W)
R658 33K (1/6W)
R103 220K (1/4W)
R104 220K (1/4W)
R105 1 (1/2W)
C112 100 10V
Q101 2SC3317
Q103 2SD1020
R106 100 (1/4W)
FB101
T102
R206 4.7 (1/4W)
D209 RD5.1EB2
C211 0.01 50V
R209 220 (1/4W)
D210 RD5.1EB2
C651 100 16V
D652 RD15EB1
D653 1S2076A
IC651 MB3759
Vcc O.C. VREF
GND RT CT D.C.
R660 2200 (1/6W)
R655 3900 (1/6W)
R661 470K (1/6W)
R653 100K (1/6W)
R654 100 (1/6W)
R656 2200 (1/6W)
C655 33 16V
R657 18K (1/6W)
C653 1000P 50V
C654 0.1 50V
RV651 1K
R651 4700 (1/6W)
C652 3300P 100V
R652 1K (1/6W)
RV651; REG 12V
R107 220K (1/4W)
R108 220K (1/4W)
R109 1 (1/2W)
C114 100 10V
Q102 2SC3317
Q104 2SD1020
R110 100 (1/4W)
FB102
C109 220 200V
C110 4.7 350V
C113 220 200V
C111 4.7 350V
R111 3.3 (5W)
R102 3.3 (5W)
D101 LB156
C108 2200P 400V
C107 2200P 400V
R101 2.7M (1/2W)
L101
C105 0.22 250V
C106 0.22 250V
C102 2200P 400V
C104 2200P 400V
C101 2200P 400V
C103 2200P 400V
CN101
AC IN
S1001

UR-14
1-618-009-12
VO-7600
VO-7630

NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

UR-14E:SWITCHING REGULATOR (FOR EK)

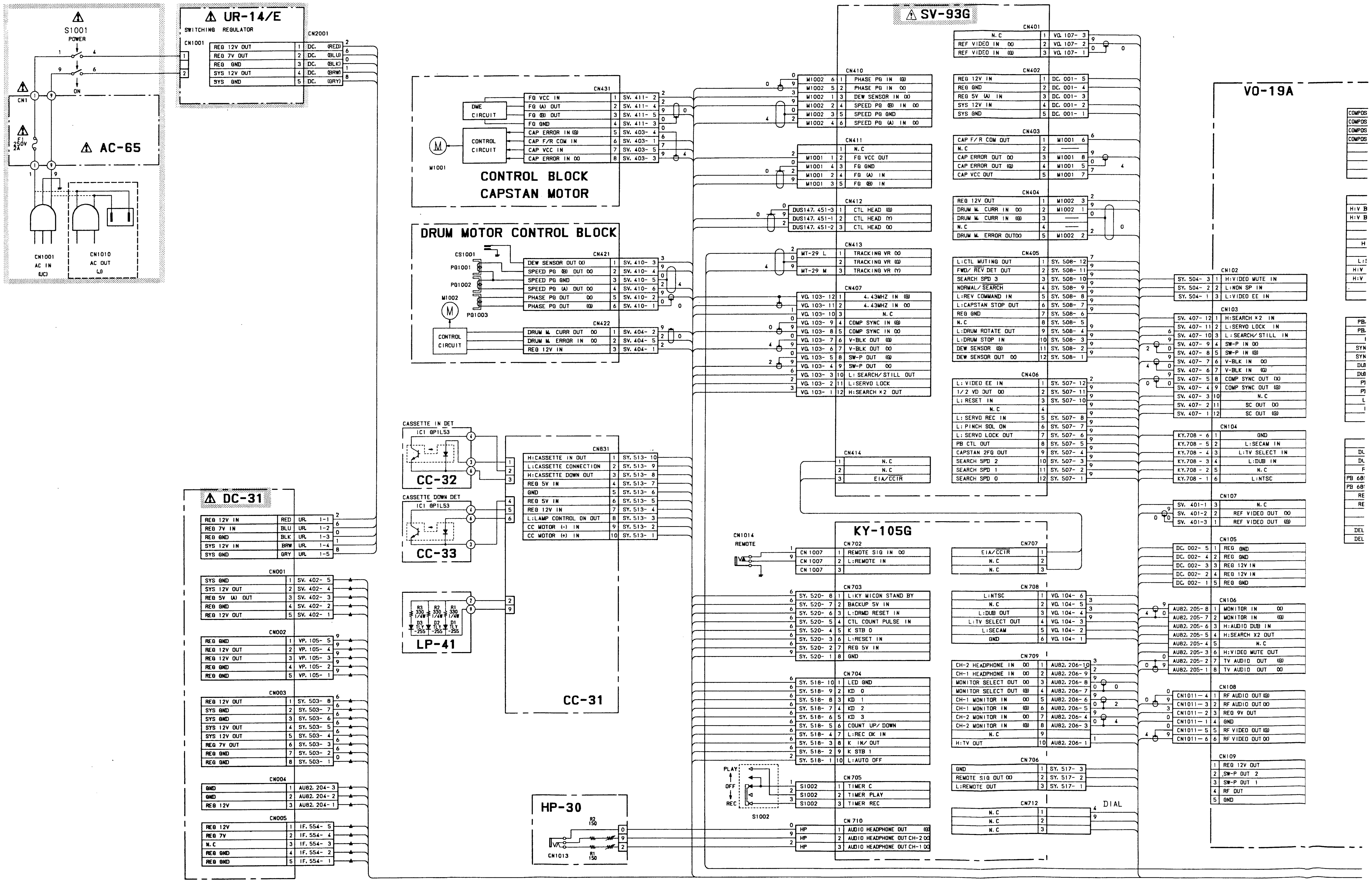

CN101
1 AC IN
2
3 AC IN
C105 0.22 250V
L101
C106 0.22 250V
C102 2200P 400V
C101 2200P 400V
C104 2200P 400V
C103 2200P 400V
R101 2.7M (1/2W)
R102 3.3 (5W)
C108 2200P 400V
C107 2200P 400V
D101 LB156
C109 220 200V
C110 4.7 350V
C113 220 200V
C111 4.7 350V
R103 220K (1/4W)
R104 220K (1/4W)
R105 1 (1/2W)
C112 100 10V
Q101 2SC3317
Q103 2SD1020
R106 100 (1/4W)
FB101
R107 220K (1/4W)
R108 220K (1/4W)
R109 1 (1/2W)
C114 100 10V
Q102 2SC3317
Q104 2SD1020
R110 100 (1/4W)
FB102
T101
T102
C203 220P 500V
D201 ESAC33-02CS
FB201
FB202
FB203
FB204
C204 220P 500V
C205 220P 500V
D202 ESAC33-02CS
FB205
FB206
FB207
FB208
C206 220P 500V
C201 2200P 200V
C202 2200P 200V
R201 33 (2W)
L201
L203
L204
L205
D203 VO-9C
D204 VO-9C
C207 22 50V
C213 2200 16V
C214 2200 16V
C212 2200 16V
C215 2200 16V
C216 3300 16V
C217 47 16V
R212 220 (1/2W)
R202 0.02 (2W)
R207 2200 (1/4W)
C209 2200P 200V
C210 0.01 50V
R208 470 (1/4W)
Q202 2SA1175
Q201 2SC2458
R205 3300 (1/4W)
R204 1K (1/4W)
D205 1S2076A
R203 4700 (1W)
D208 RD7.5EL2
D206 RD11EB2
R206 4.7 (1/4W)
D209 RD5.1EB2
C211 0.01 50V
R209 220 (1/4W)
D210 RD5.1EB2
C651 100 16V
D652 RD15EB1
D653 1S2076A
D651 10E-1
R659 820 (1/6W)
R658 33K (1/6W)
IC651 MB3759
Vcc O.C. VREF
GND RT CT D.C.
R660 2200 (1/6W)
R655 3900 (1/6W)
R661 470K (1/6W)
R653 100K (1/6W)
R654 100 (1/6W)
R656 2200 (1/6W)
C655 33 16V
R657 18K (1/6W)
C653 1000P 50V
C654 0.1 50V
RV651 1K
R651 4700 (1/6W)
C652 3300P 100V
R652 1K (1/6W)
CN102
REG 12V 1
REG 7V 2
REG GND 3
SYS 12V 4
SYS GND 5
⊘ RV651; REG 12V
UR-14E
1-413-249-12
VO-7630

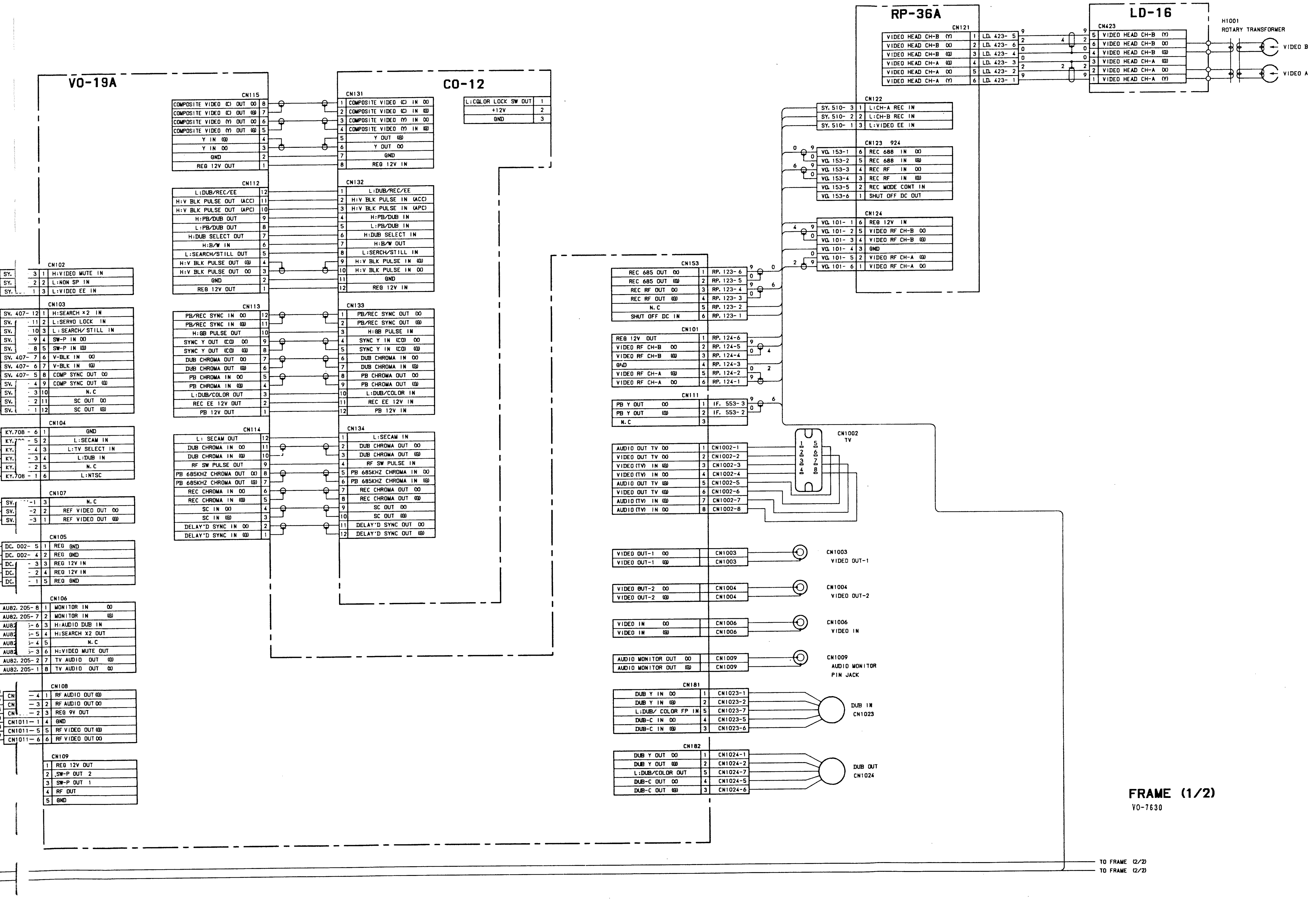
NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

1057 106

FRAME(1/2)(FOR UC)


S1001
POWER
CN1
AC-65
CN1001
AC IN
(UC)
CN1010
AC OUT
UR-14/E
SWITCHING REGULATOR
CN1001
CN2001
REG 12V OUT
REG 7V OUT
REG GND
SYS 12V OUT
SYS GND
CN431
CONTROL BLOCK
CAPSTAN MOTOR
M1001
DRUM MOTOR CONTROL BLOCK
CN421
CN422
CS1001
PG1001
PG1002
PG1003
M1002
CASSETTE IN DET
CASSETTE DOWN DET
CC-32
CC-33
LP-41
CN831
CC-31
DC-31
CN001
CN002
CN003
CN004
CN005
HP-30
CN1013
SV-93G
CN401
CN402
CN403
CN404
CN405
CN406
CN407
CN410
CN411
CN412
CN413
CN414
KY-105G
CN702
CN703
CN704
CN705
CN706
CN707
CN708
CN709
CN710
CN712
CN1014
REMOTE
S1002
PLAY
OFF
REC
DIAL
VO-19A
CN102
CN103
CN104
CN105
CN106
CN107
CN108
CN109


VO-19A
CN102
CN103
CN104
CN105
CN106
CN107
CN108
CN109
CN112
CN113
CN114
CN115
CO-12
CN131
CN132
CN133
CN134
L:COLOR LOCK SW OUT 1
+12V 2
GND 3
CN153
CN101
CN111
CN181
CN182
RP-36A
CN121
CN122
CN123
CN124
LD-16
CN423
H1001
ROTARY TRANSFORMER
VIDEO B
VIDEO A
CN1002
TV
CN1003
VIDEO OUT-1
CN1004
VIDEO OUT-2
CN1006
VIDEO IN
CN1009
AUDIO MONITOR
PIN JACK
DUB IN
CN1023
DUB OUT
CN1024
TO FRAME (2/2)
TO FRAME (2/2)

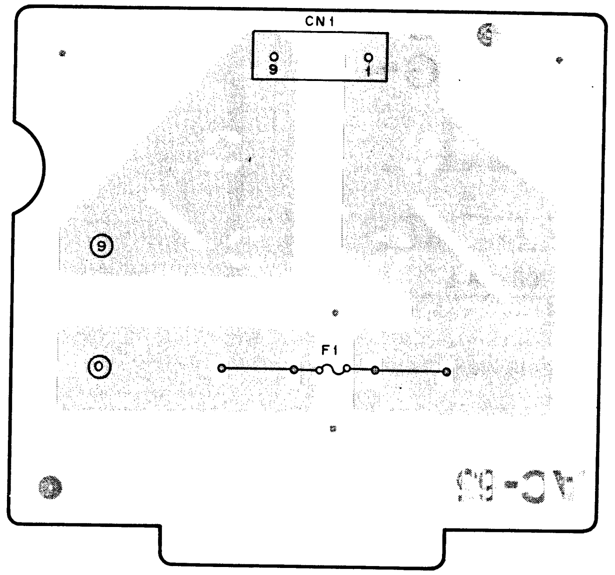
NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

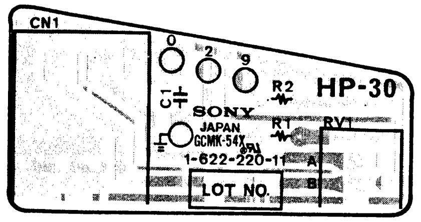
FRAME (1/2)

VO-7630

AC-65: AC INPUT(FOR UC)
HP-30: HEADPHONES


CN1
9
1
9
0
F1
AC-65

AC-65 -SOLDERING SIDE-
1-618-591-11
VO-7600
VO-7630

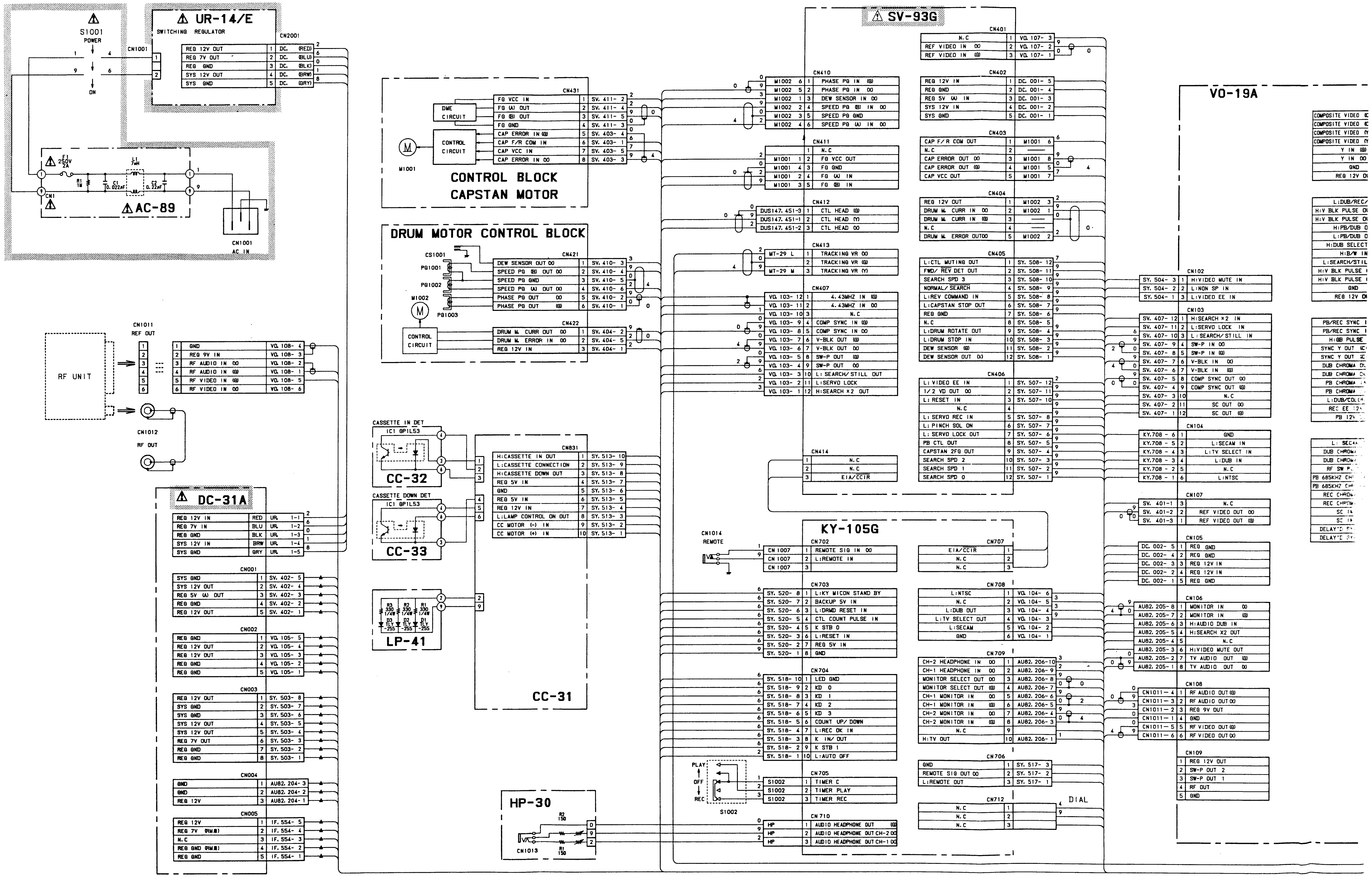

CN1
0
2
9
C1
R2
HP-30
SONY
JAPAN
GCMK-54X
R1
RV1
1-622-220-11
A
B
LOT NO.

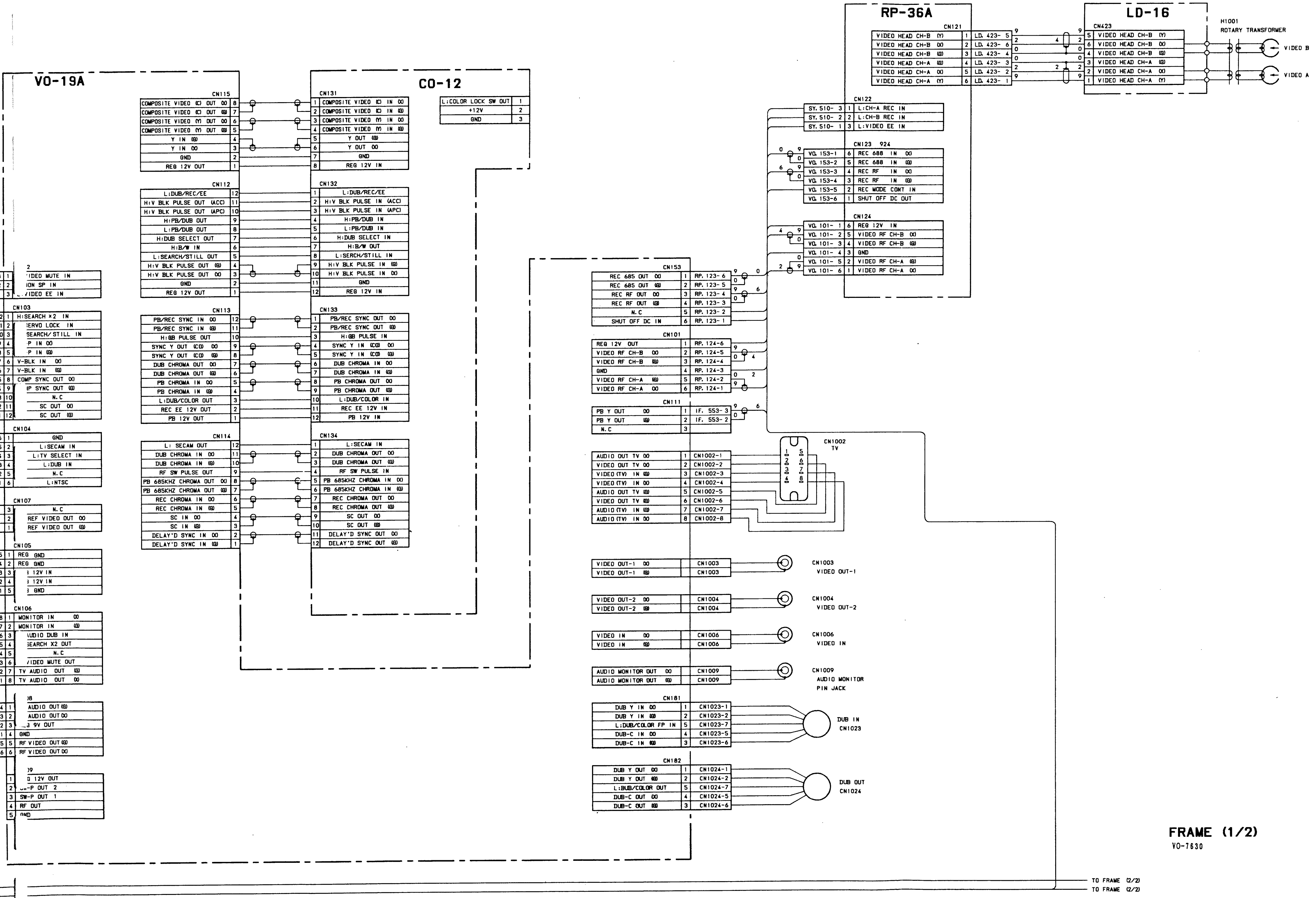
HP-30
-COMPONENT SIDE-

1-622-220-11
VO-7600
VO-7630

14-112 113/114

FRAME(1/2)(FOR EK)


UR-14/E
SWITCHING REGULATOR
S1001
POWER
ON
AC-89
CN1001
AC IN
SV-93G
VO-19A
CONTROL BLOCK
CAPSTAN MOTOR
DRUM MOTOR CONTROL BLOCK
DME CIRCUIT
CONTROL CIRCUIT
M1001
M1002
RF UNIT
CN1011
REF OUT
CN1012
RF OUT
DC-31A
CASSETTE IN DET
CC-32
CASSETTE DOWN DET
CC-33
LP-41
CC-31
KY-105G
HP-30
CN1013
CN1014
REMOTE
S1002
PLAY
OFF
REC
DIAL

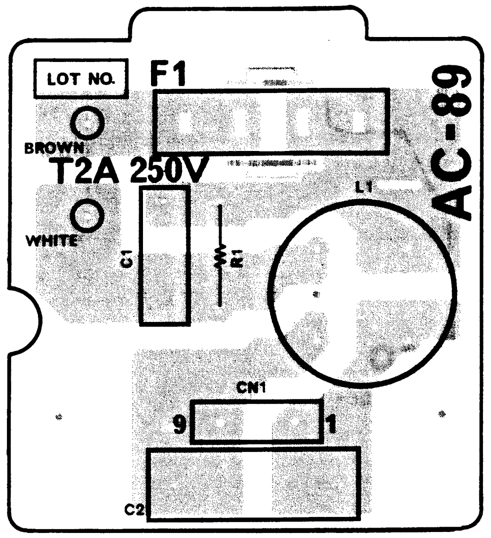

VO-19A
CO-12
RP-36A
LD-16
H1001
ROTARY TRANSFORMER
VIDEO B
VIDEO A
CN115
CN112
CN113
CN114
CN103
CN104
CN105
CN106
CN107
CN131
CN132
CN133
CN134
CN121
CN122
CN123 924
CN124
CN423
CN153
CN101
CN111
CN181
CN182
CN1002 TV
CN1003 VIDEO OUT-1
CN1004 VIDEO OUT-2
CN1006 VIDEO IN
CN1009 AUDIO MONITOR PIN JACK
DUB IN CN1023
DUB OUT CN1024
L:COLOR LOCK SW OUT
+12V
GND
COMPOSITE VIDEO (C) OUT
COMPOSITE VIDEO (Y) OUT
Y IN
REG 12V OUT
L:DUB/REC/EE
H:V BLK PULSE OUT (ACC)
H:V BLK PULSE OUT (APC)
H:PB/DUB OUT
L:PB/DUB OUT
H:DUB SELECT OUT
H:B/W IN
L:SEARCH/STILL OUT
PB/REC SYNC IN
H:SB PULSE OUT
SYNC Y OUT
DUB CHROMA OUT
PB CHROMA IN
L:DUB/COLOR OUT
REC EE 12V OUT
PB 12V OUT
L:SECAM OUT
DUB CHROMA IN
RF SW PULSE OUT
PB 685KHZ CHROMA OUT
REC CHROMA IN
SC IN
DELAY'D SYNC IN
VIDEO HEAD CH-B
VIDEO HEAD CH-A
L:CH-A REC IN
L:CH-B REC IN
L:VIDEO EE IN
REC 688 IN
REC RF IN
REC MODE CONT IN
SHUT OFF DC OUT
REG 12V IN
VIDEO RF CH-B
VIDEO RF CH-A
REC 685 OUT
REC RF OUT
N.C
SHUT OFF DC IN
PB Y OUT
AUDIO OUT TV
VIDEO OUT TV
VIDEO (TV) IN
AUDIO (TV) IN
VIDEO OUT-1
VIDEO OUT-2
VIDEO IN
AUDIO MONITOR OUT
DUB Y IN
L:DUB/COLOR FP IN
DUB-C IN
DUB Y OUT
L:DUB/COLOR OUT
DUB-C OUT
TO FRAME (2/2)
TO FRAME (2/2)

FRAME (1/2)
VO-7630

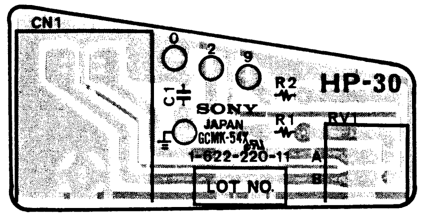
NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

AC-89: AC INPUT(FOR EK)
HP-30: HEADPHONES

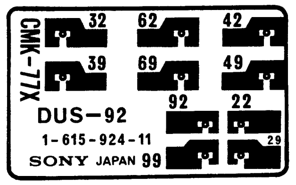

LOT NO.
F1
BROWN
T2A 250V
WHITE
C1
R1
L1
AC-89
CN1
9
1
C2

AC-89
-COMPONENT SIDE-
1-622-786-11
VO-7630


CN1
0
2
9
C1
R2
HP-30
SONY
JAPAN
GCMK-54X
R1
RV1
1-622-220-11
A
B
LOT NO.

LM-13
-COMPONENT SIDE-
1-618-600-11
VO-7600
VO-7630

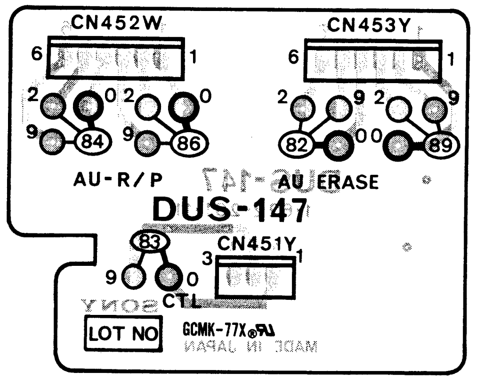
DUS-92:AUDIO CTL HEAD
DUS-147:AUDIO CTL HEAD
LM-13:THREADING MOTOR
MC-28:MIC IN
MT-29:AUDIO LEVEL METER


CMK-77X
32
62
42
39
69
49
92
22
29
DUS-92
1-615-924-11
SONY JAPAN 99

DUS-92

-COMPONENT SIDE-

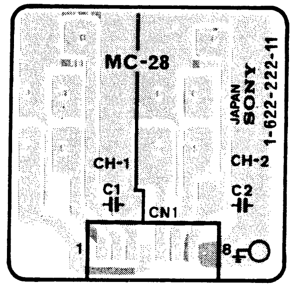
1-615-924-11
VO-7600
VO-7630


CN452W
CN453Y
6
1
6
1
2
0
2
0
2
9
2
9
9
84
9
86
82
00
89
AU-R/P
AU ERASE
DUS-147
83
CN451Y
3
1
9
0
CTL
LOT NO
GCMK-77X
MADE IN JAPAN

DUS-147

-COMPONENT SIDE-

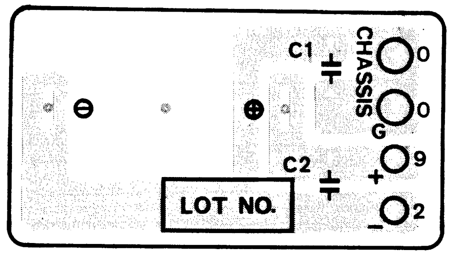
1-622-261-11
VO-7600
VO-7630


MC-28
JAPAN
SONY
1-622-222-11
CH-1
CH-2
C1
C2
CN1
1
8

MC-28

-COMPONENT SIDE-

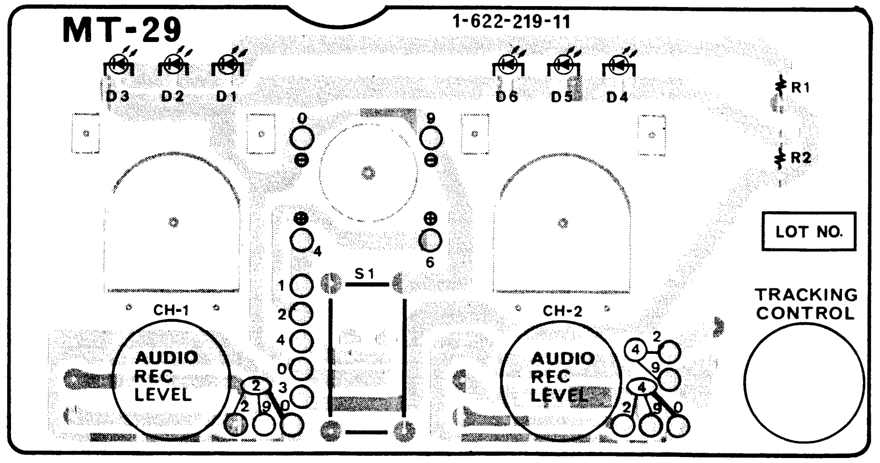
1-622-222-11
VO-7600
VO-7630


C1
CHASSIS
0
0
G
C2
9
2
LOT NO.

LM-13

-COMPONENT SIDE-

1-618-600-11
VO-7600
VO-7630

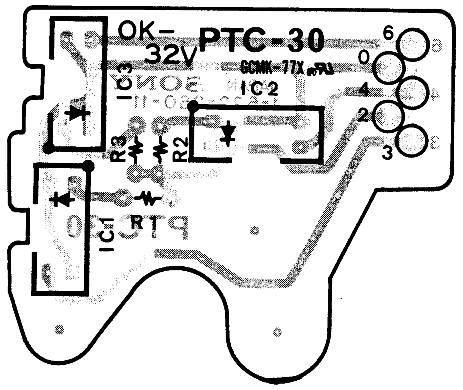

MT-29
1-622-219-11
D3
D2
D1
D6
D5
D4
R1
R2
0
9
LOT NO.
6
4
S1
1
2
4
3
CH-1
CH-2
TRACKING
CONTROL
AUDIO
REC
LEVEL
AUDIO
REC
LEVEL

MT-29

-COMPONENT SIDE-

1-622-219-11
VO-7600
VO-7630

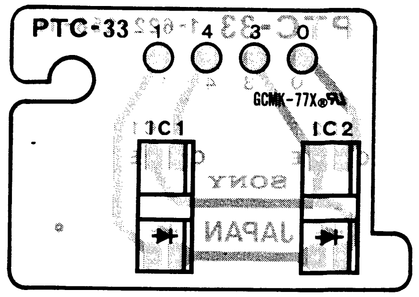
EC-28:CTL HEAD
PTC-30:SP, MISS REC. KCA DETECTOR
PTC-33:FR STOP DETECTOR
PTC-34:UNTHREADEND DETECTOR
PT-9:REEL MOTOR DRIVER


OK-
32V
PTC-30
GCMK-77X
IC2
IC3
R3
R2
RT
IC1
6
0
4
2
3

PTC-30

-COMPONENT SIDE-

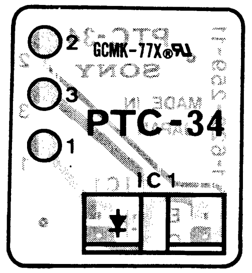
1-622-260-11
VO-7600
VO-7630


PTC-33
1
4
3
0
GCMK-77X
IC1
IC2

PTC-33

-COMPONENT SIDE-

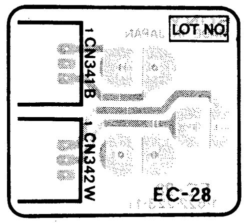
1-622-258-11
VO-7600
VO-7630


2
GCMK-77X
3
PTC-34
1
IC1

PTC-34

-COMPONENT SIDE-

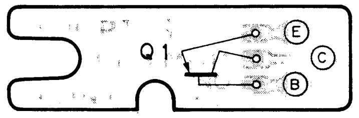
1-622-259-11
VO-7600
VO-7630


LOT NO.
CN341B
CN342W
EC-28

EC-28

-COMPONENT SIDE-

1-622-228-11
VO-7600
VO-7630

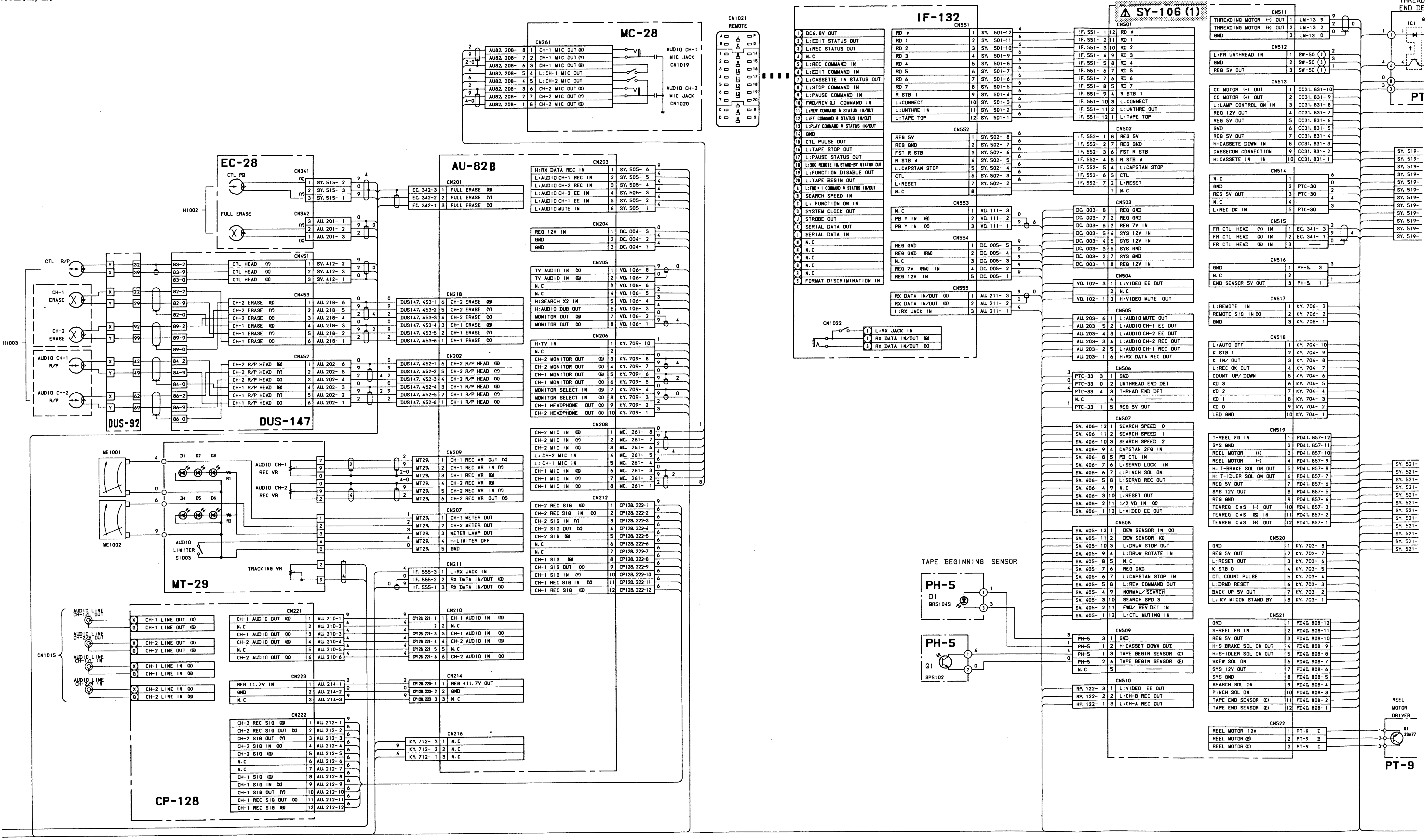


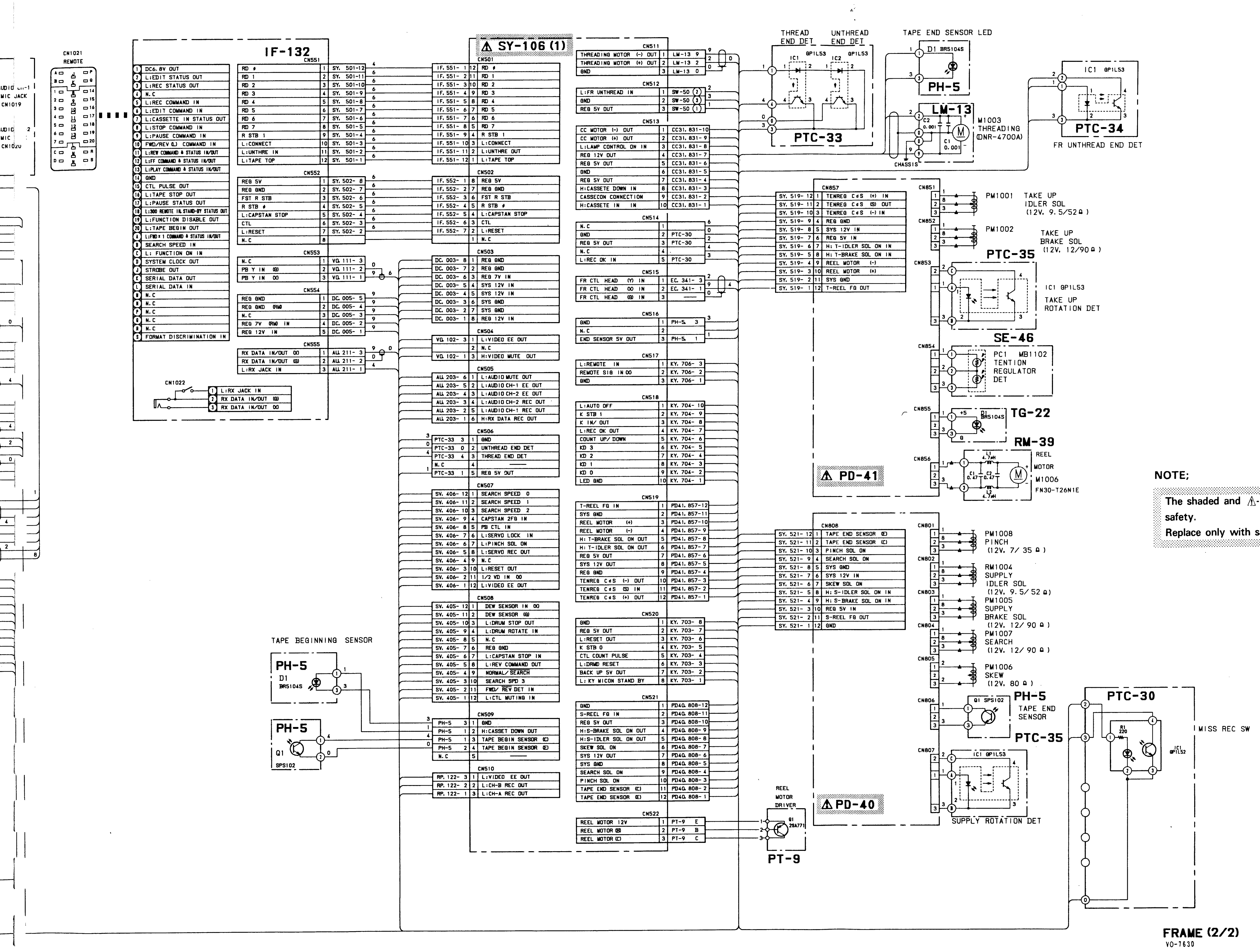
PT-9

- SOLDERING SIDE -

1-605-018-11
VO-7600
VO-7630

FRAME(2/2)


MC-28
CN261
AUDIO CH-1 MIC JACK CN1019
AUDIO CH-2 MIC JACK CN1020
CN1021 REMOTE
EC-28
CTL PB
FULL ERASE
CN341
CN342
H1002
AU-82B
CN201
CN203
CN204
CN205
CN206
CN208
CN209
CN207
CN211
CN212
CN210
CN214
CN216
CN218
CN202
CTL R/P
CH-1 ERASE
CH-2 ERASE
AUDIO CH-1 R/P
AUDIO CH-2 R/P
H1003
DUS-92
DUS-147
CN451
CN453
CN452
ME1001
ME1002
MT-29
AUDIO CH-1 REC VR
AUDIO CH-2 REC VR
AUDIO LIMITER S1003
TRACKING VR
CP-128
CN221
CN223
CN222
CN1015
AUDIO LINE CH-1/L OUT
AUDIO LINE CH-2/R OUT
AUDIO LINE CH-1/L IN
AUDIO LINE CH-2/R IN
IF-132
CN551
CN552
CN553
CN554
CN555
CN1022
⚠ SY-106 (1)
CN501
CN502
CN503
CN504
CN505
CN506
CN507
CN508
CN509
CN510
CN511
CN512
CN513
CN514
CN515
CN516
CN517
CN518
CN519
CN520
CN521
CN522
TAPE BEGINNING SENSOR
PH-5
D1 BR5104S
PH-5
Q1 SPS102
REEL MOTOR DRIVER
PT-9
THREAD END DE
IC1
PT


IF-132
CN1021
REMOTE
CN1022
⚠ SY-106 (1)
CN501
CN502
CN503
CN504
CN505
CN506
CN507
CN508
CN509
CN510
CN511
CN512
CN513
CN514
CN515
CN516
CN517
CN518
CN519
CN520
CN521
CN522
THREAD END DET
UNTHREAD END DET
PTC-33
TAPE END SENSOR LED
PH-5
LM-13
M1003 THREADING (DNR-4700A)
CHASSIS
PTC-34
FR UNTHREAD END DET
CN857
CN808
⚠ PD-41
⚠ PD-40
PM1001 TAKE UP IDLER SOL (12V, 9.5/52Ω)
PM1002 TAKE UP BRAKE SOL (12V, 12/90Ω)
PTC-35
IC1 GP1L53
TAKE UP ROTATION DET
SE-46
PC1 MB1102 TENTION REGULATOR DET
TG-22
RM-39
REEL MOTOR M1006 FN30-T26N1E
PM1008 PINCH (12V, 7/35Ω)
RM1004 SUPPLY IDLER SOL (12V, 9.5/52Ω)
PM1005 SUPPLY BRAKE SOL (12V, 12/90Ω)
PM1007 SEARCH (12V, 12/90Ω)
PM1006 SKEW (12V, 80Ω)
PH-5 TAPE END SENSOR
PTC-35
SUPPLY ROTATION DET
PTC-30
MISS REC SW
TAPE BEGINNING SENSOR
PH-5 D1 BR5104S
PH-5 Q1 SPS102
REEL MOTOR DRIVER
Q1 2SA771
PT-9

NOTE;

The shaded and ⚠-marked components are critical to safety.
Replace only with same components as specified.

FRAME (2/2)
VO-7630

SECTION 15
SPARE PARTS AND FIXTURE

15-1. PARTS INFORMATION

(1)

> The shaded and ⚠ -marked components are critical to safety.
> Replace only with same components as specified.

(2) Replacement Parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to "improved parts and/or engineering changes" or "standardization of genuine parts".
This manual's exploded views and electrical spare parts list indicate the part numbers of "the standardized genuine parts at the present". Regarding engineering part changes by the engineering department, refer to Sony service bulletins and service manual supplements.

(3) The parts marked with "s" in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with "o" in the SP column are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(4) Items with no part number and/or no description are not stocked because they are seldom required for routine service.

(5) (T) after a spring description is shown on the exploded views in order to indicate the number of spring turns required for the use. (Example)
Spring, tension (24T); This spring must be cut at its 24th turn for actual use.

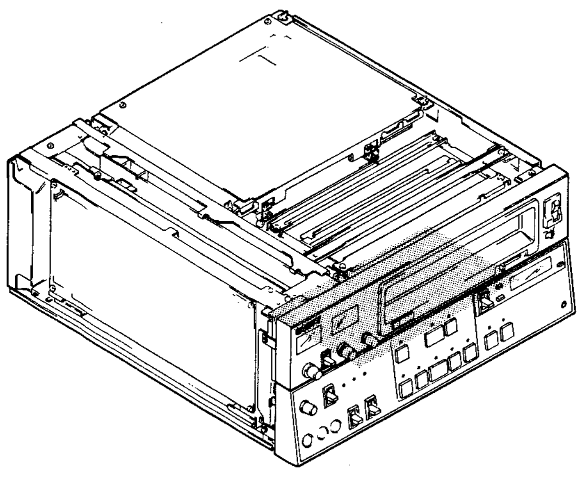
15-2. EXPLODED VIEW

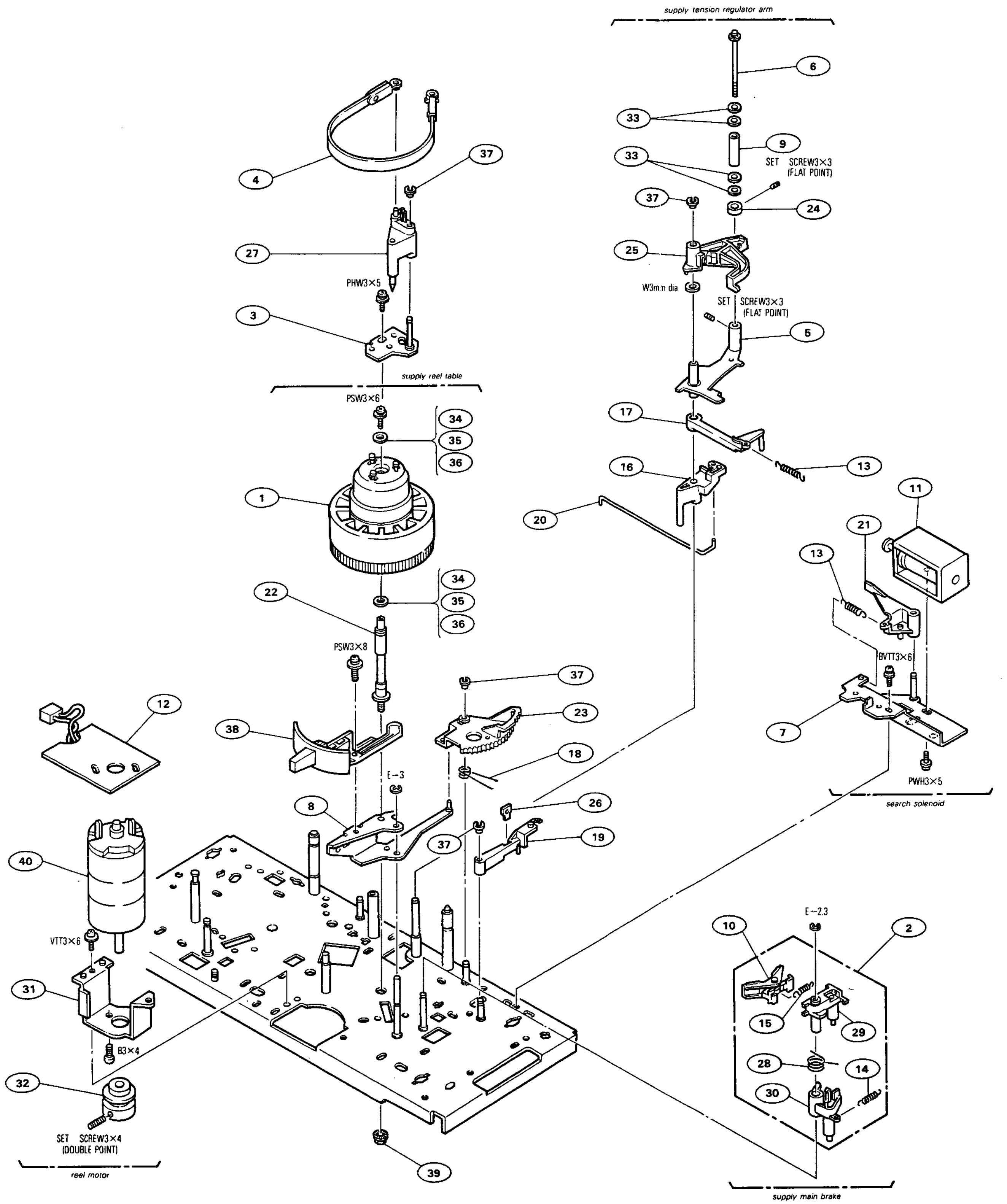
. Exploded vews are composed of the following blocks.

(1) Reel Chassis (1), Supply Side
 S Reel Table
 S Tension Regulator Arm
 Search Solenoid
 S Main Brake
 Reel Motor
(2) Reel Chassis (2), Take-up Side
 T Reel Table
 FF/REW Idler
 T Main brake
 T Tension Regulator Arm
 R Brake
(3) Reel Chassis (3), Back Side
 S Idler Solenoid
 T Idler Solenoid
 FF/REW Pulley
 S Brake Solenoid
 T Brake Solenoid
(4) Threading Ring Block
 Threading Ring
 Gear Box
 T Correction Guide
 Tape Beginning Sensor
 FR Detector
(5) Threading Arm
 T Drawer Arm
 S Drawer Arm
 S Drawer Roller
 Drawer Lever
(6) Drum and Capstan Blocks
 Head Drum
 Capstan Motor
 Audio/ CTL Head
 Tape Guides

(7) Erase Head Base
  Erase Head Base
  S Guard
(8) Pinch Lever and Pinch Solenoid Blocks
  Pinch Lever
  Pinch Roller Pre-set Cam
  Pinch Solenoid
(9) Cassette-up Compartment Block
(10) Function Control
  Function Control Board
(11) Front Panel Block
  Ornamental Front Panel
  Key Top
(12) Chassis Block (1), Left Side
  Printed Circuit Boards
(13) Chassis Block (2), Back Side
  Printed Circuit Boards
  Connector Panel for Video Signal
(14) Level Control Panel
  Meter Panel
  Headphone Block
(15) Switching Regulator
(16) Connector Panel for Audio Signal
(17) Chassis Block (3), Bottom
  Printed Circuit Boards
(18) Ornamental Panel Block
  U Case
  Bottom Plate

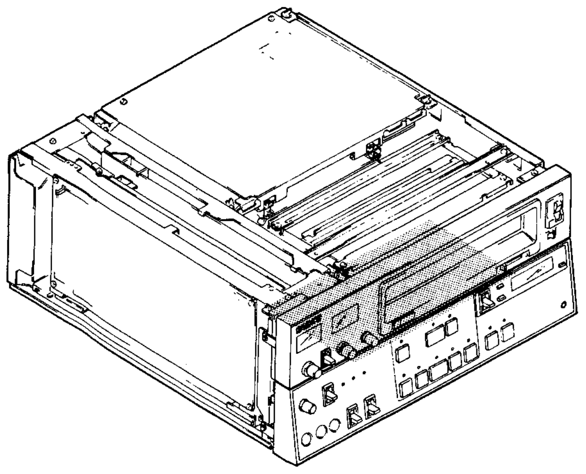
REEL CHASSIS (1), SUPPLY SIDE

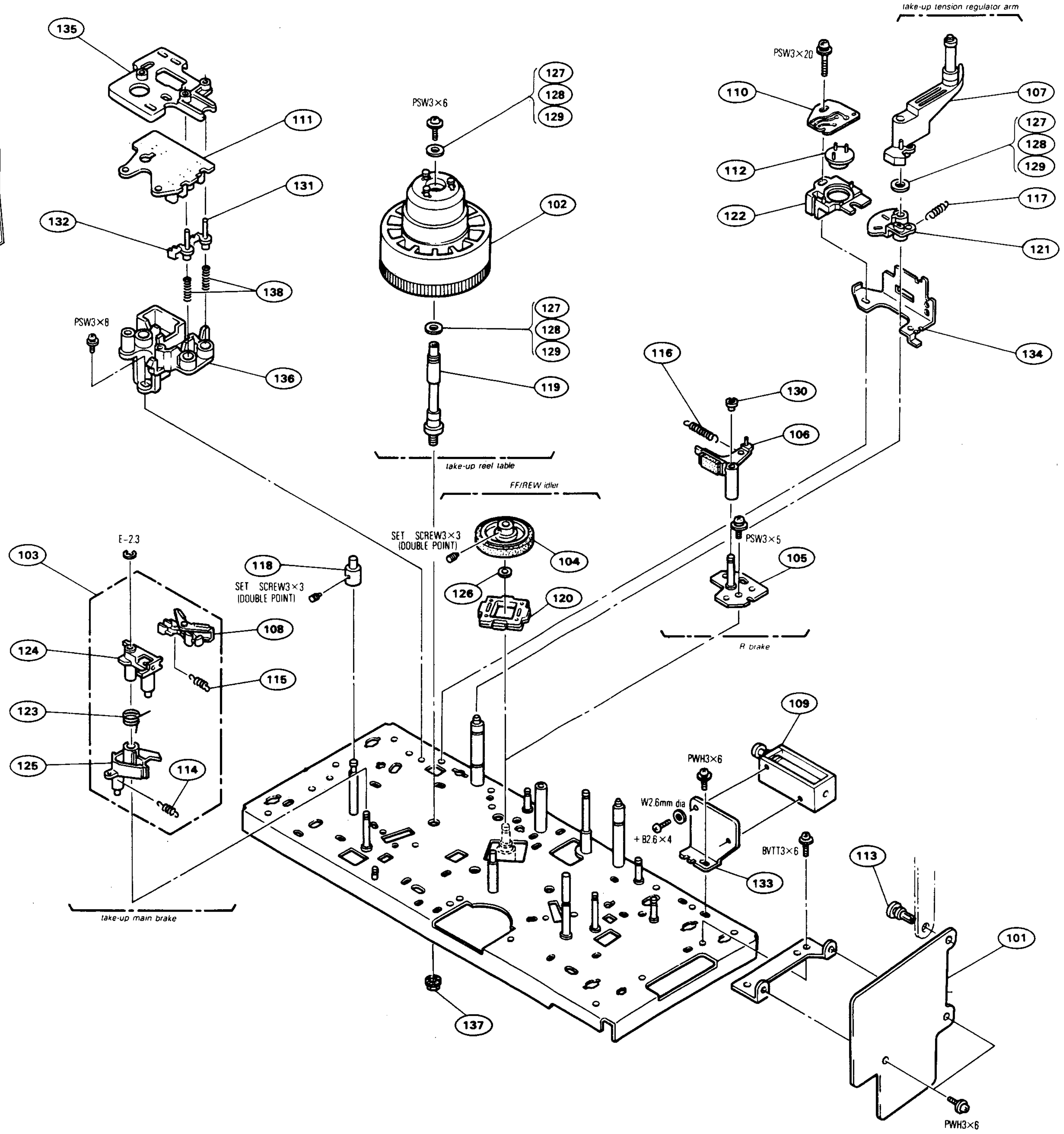



supply tension regulator arm
6
33
33
9
SET SCREW3×3
(FLAT POINT)
24
37
25
W3mm dia
SET SCREW3×3
(FLAT POINT)
5
4
37
27
PHW3×5
3
supply reel table
PSW3×6
34
35
36
1
34
35
36
22
PSW3×8
17
16
13
20
11
21
13
BVTT3×6
7
PWH3×5
search solenoid
12
38
37
23
18
E-3
8
26
19
37
40
VTT3×8
31
B3×4
32
SET SCREW3×4
(DOUBLE POINT)
reel motor
39
E-2.3
10
2
15
29
28
14
30
supply main brake

No.	Part No.	SP	Description
1	A-6739-017-A	s	TABLE ASSY, REEL
2	A-6741-038-B	s	BRAKE ASSY, MAIN
3	X-3668-706-0	o	BASE ASSY, S TENSION REGULATOR
4	X-3668-707-0	s	BAND ASSY, S TENSION REGULATOR
5	X-3668-708-0	s	ARM(A)ASSY, S TENSION REGULATOR
6	X-3668-709-0	s	SHAFT (1) ASSY, ROLLER
7	X-3668-717-0	o	BASE ASSY, SEARCH
8	X-3668-725-0	o	ARM (C) ASSY, SKEW
9	X-3668-727-0	s	GUIDE ASS'Y, TAPE
10	X-3668-749-0	s	HOLDER ASSY, LINING
11	1-454-417-31	s	SOLENOID, PLUNGER
12	1-618-873-11	o	PRINTED CIRCUIT BOARD, RM-39
13	3-534-238-XX	s	SPRING, TENSION (23T)
14	3-535-369-XX	s	SPRING, TENSION (12T)
15	3-548-124-00	s	SPRING, TENSION
16	3-668-787-02		ARM, S DETECTION
17	3-668-794-00	o	ARM (A), SKEW
18	3-668-795-00	s	SPRING
19	3-668-797-00	o	ARM, SKEW LOCK
20	3-668-804-00	s	LINK, DETECTION TENSION
21	3-668-808-00	s	ARM, FWD, SEARCH
22	3-668-827-00	o	SHAFT (S), REEL
23	3-668-835-00	s	ARM (B), SKEW
24	3-668-874-00	s	FLANGE (1), LOWER
25	3-668-936-00	s	ARM (B), S TENSION REGULATOR
26	3-668-937-00	s	CLAW, SKEW LOCK
27	3-668-939-00	o	ARM, BAND LOCK
28	3-668-966-00	s	SPRING
29	3-668-970-00	o	ARM, BRAKE
30	3-668-971-00	o	ARM, BRAKE RELEASE
31	3-672-743-01	o	BRACKET, MOTOR
32	3-672-744-01	s	PULLEY (R), MOTOR
33	3-701-438-01	s	WASHER, POLY 2.5MM DIA., 0.25T
34	3-701-444-01	s	WASHER, POLY 6MM DIA., 0.13T
35	3-701-444-11	s	WASHER, POLY 6MM DIA., 0.25T
36	3-701-444-21	s	WASHER, POLY 6MM DIA., 0.50T
37	3-703-074-00	s	CAP 3, SHAFT
38	3-718-337-01	s	LEVER, SKEW
39	4-304-749-00	o	NUT, FLANGE
40	8-835-178-01	s	MOTOR, DC FN30-T26N1E

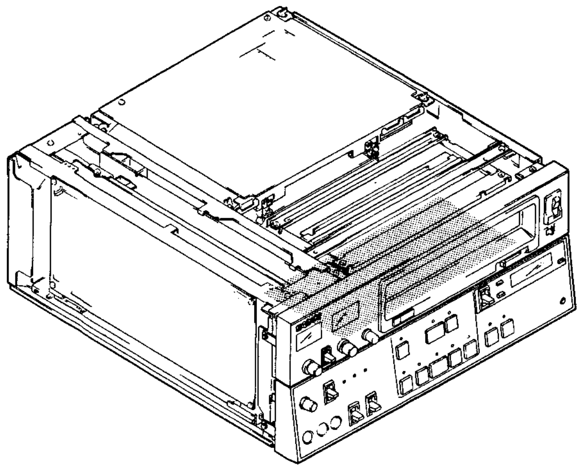
REEL CHASSIS (2), TAKE-UP SIDE

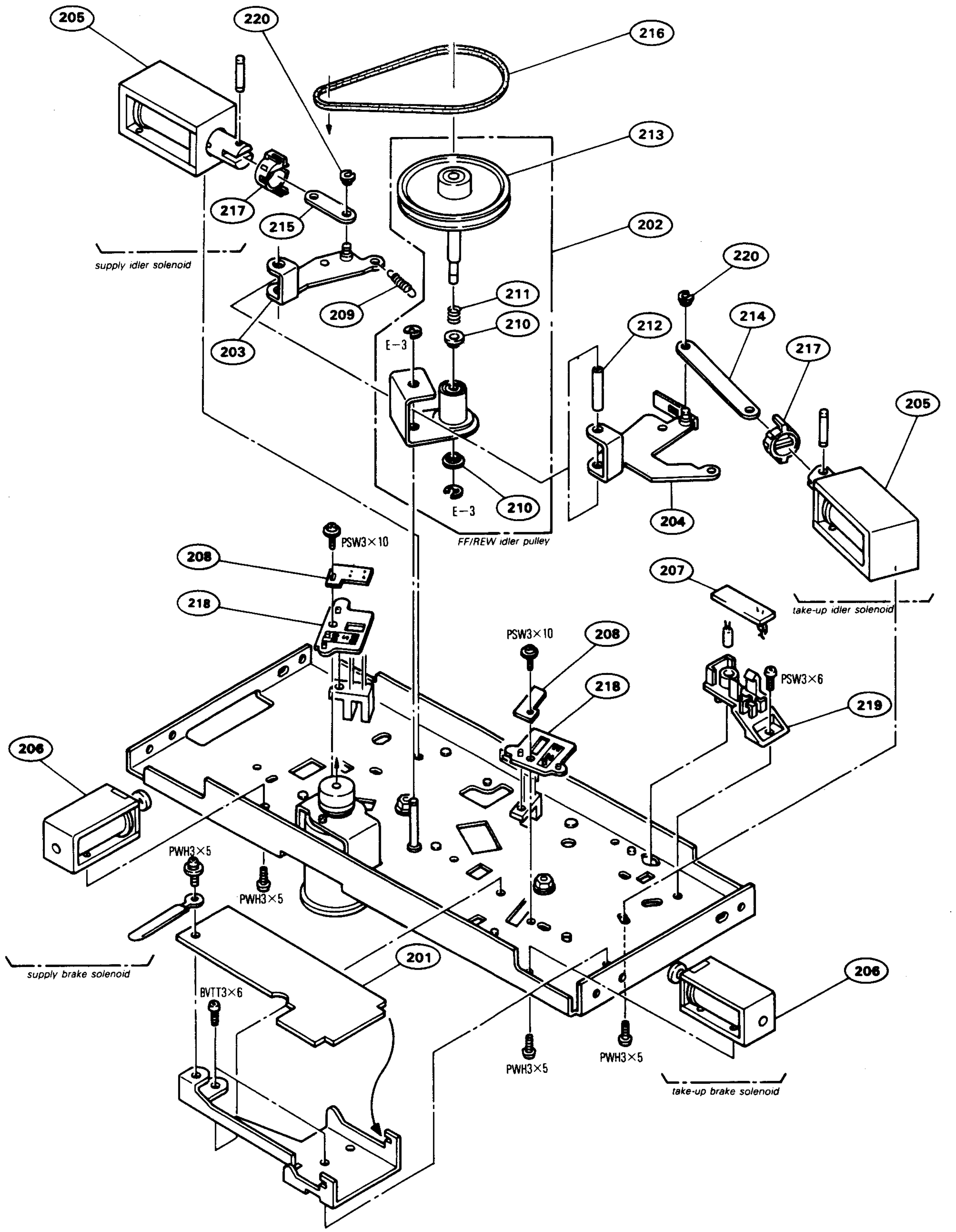



135
111
131
132
138
PSW3×8
136
PSW3×6
127
128
129
102
127
128
129
119
take-up reel table
FF/REW idler
SET SCREW3×3 (DOUBLE POINT)
104
126
120
take-up tension regulator arm
PSW3×20
110
107
127
128
129
112
122
117
121
134
116
130
106
PSW3×5
105
R brake
103
E-2.3
118
SET SCREW3×3 (DOUBLE POINT)
108
124
115
123
125
114
take-up main brake
109
PWH3×6
W2.6mm dia
+B2.6×4
BVTT3×6
133
113
101
137
PWH3×6

No.	Part No.	SP	Description
101	A-6725-569-A	o	MOUNTED CIRCUIT BOARD, PD-40
102	A-6739-017-A	s	TABLE ASS'Y, REEL
103	A-6741-038-B	s	BRAKE ASS'Y, MAIN
104	X-3646-026-0	s	IDLER ASS'Y, FF
105	X-3668-705-0	o	BASE ASS'Y, R BRAKE
106	X-3668-737-0	s	BRAKE ASS'Y, R
107	X-3668-738-0	s	ARM ASS'Y, T TENSION REGULATOR
108	X-3668-749-0	s	HOLDER ASS'Y, LINING
109	1-454-446-11	s	SOLENOID, PLUNGER
110	1-618-599-11	o	PRINTED CIRCUIT BOARD, SE-46
111	1-622-260-11	o	PRINTED CIRCUIT BOARD, PTC-30
112	1-806-232-21	s	DETECTOR MB-1102/S.N
113	2-382-416-01	o	SUPPORT, PC
114	3-535-369-XX	s	SPRING, TENSION (12T)
115	3-548-124-00	s	SPRING, TENSION
116	3-549-861-00	s	SPRING, TENSION
117	3-642-427-00	s	SPRING, TENSION
118	3-668-031-00	o	RETAINER (UPPER), CASSETTE
119	3-668-766-00	o	SHAFT (T), REEL
120	3-668-780-00	o	CUSHION, IDLER
121	3-668-788-00	s	ART, T DETECTION
122	3-668-789-00	o	HOLDER, BRIDGE, PHOTO
123	3-668-966-00	s	SPRING
124	3-668-970-00	o	ARM, BRAKE
125	3-668-971-00	o	ARM, BRAKE RELEASE
126	3-701-441-21	s	WASHER, POLY 4MM DIA., 0.50T
127	3-701-444-01	s	WASHER, POLY 6MM DIA., 0.13T
128	3-701-444-11	s	WASHER, POLY 6MM DIA., 0.25T
129	3-701-444-21	s	WASHER, POLY 6MM DIA., 0.50T
130	3-703-074-00	s	CAP 3, SHAFT
131	3-718-307-01	s	ACTUATOR, TRC
132	3-718-307-11	s	ACTUATOR, TRC
133	3-718-308-01	o	BRACKET, SK SOLENOID
134	3-718-326-01	o	STOPPER (SP)
135	3-718-342-01	o	TRC-BOX (UPPER)
136	3-718-343-01	o	TRC-BOX (LOWER)
137	4-304-749-00	o	NUT, FLANGE
138	4-858-779-00	s	SPRING, COMPRESSION

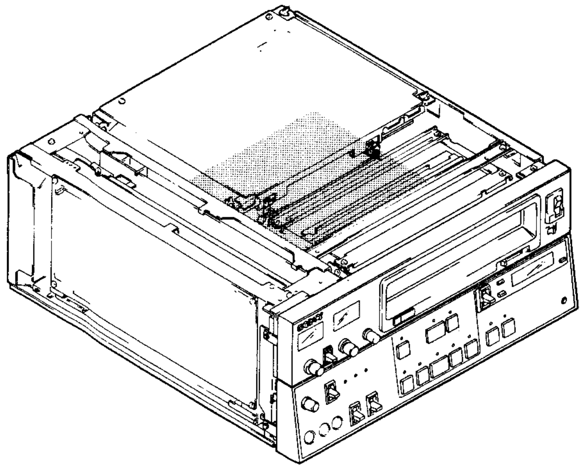
REEL CHASSIS (3), BACK SIDE

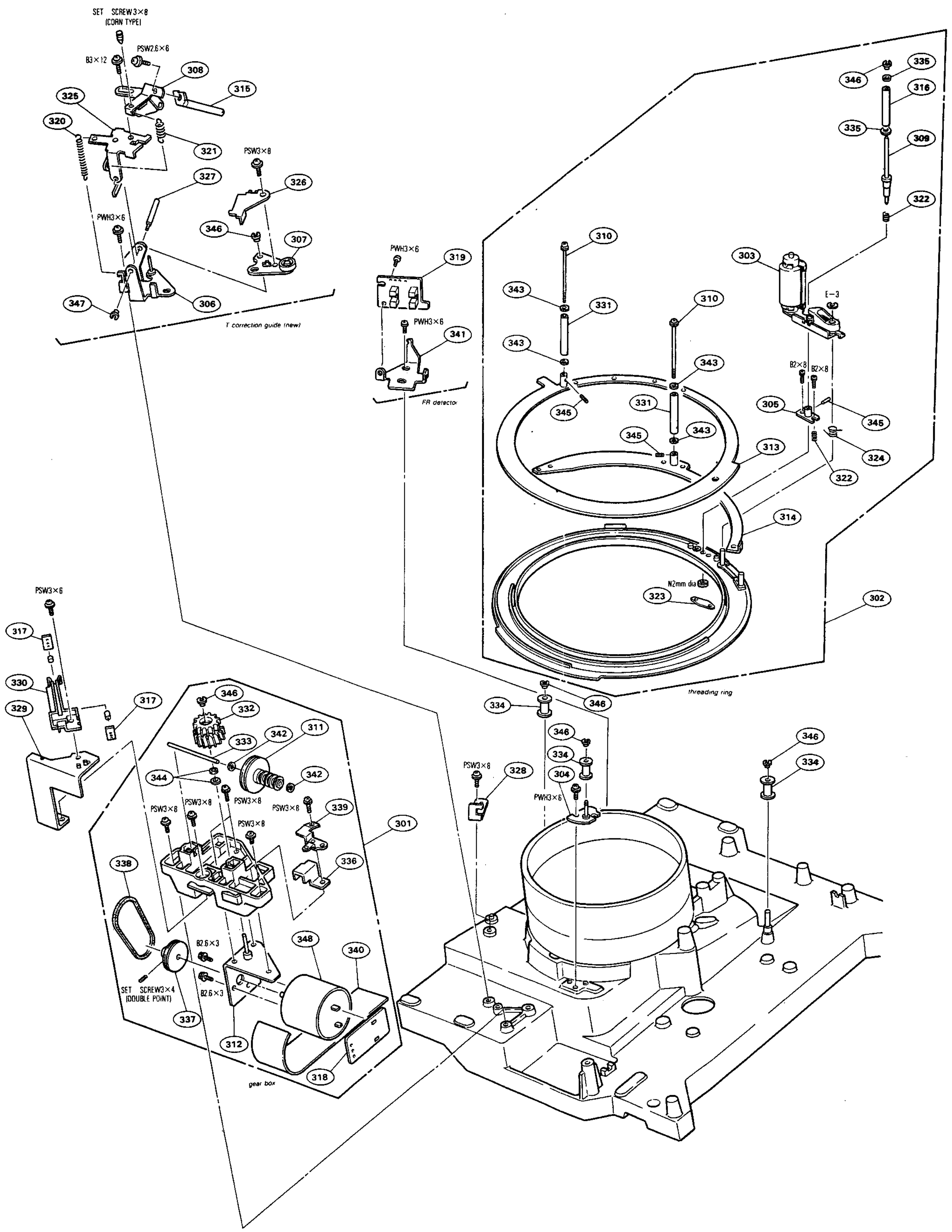



205
220
216
213
202
217
215
supply idler solenoid
209
203
211
210
E-3
212
220
214
217
205
E-3
210
204
FF/REW idler pulley
PSW3×10
208
218
207
take-up idler solenoid
PSW3×10
208
218
PSW3×6
219
206
PWH3×5
PWH3×5
supply brake solenoid
201
BVTT3×6
PWH3×5
PWH3×5
206
take-up brake solenoid

No.	Part No.	SP	Description
201	A-6725-570-A	o	MOUNTED CIRCUIT BOARD, PD-41
202	A-6740-069-B	s	PULLEY BLOCK, ASS'Y, IDLER
203	X-3668-703-0	o	LEVER ASS'Y, S
204	X-3668-704-0	o	LEVER ASS'Y, T
205	1-454-415-11	s	SOLENOID, PLUNGER
206	1-454-417-31	s	SOLENOID, PLUNGER
207	1-618-597-11	o	PRINTED CIRCUIT BOARD, TG-22
208	1-622-218-11	o	PRINTED CIRCUIT BOARD, PTC-35
209	3-437-452-00	s	SPRING, TENSION
210	3-650-512-00	s	COLLAR, (A)
211	3-651-572-00	s	SPRING, COMPRESSION
212	3-668-048-11	o	SPACER (DIA. 4x20)
213	3-668-772-00	s	SHAFT, IDLER PULLEY
214	3-668-781-00	o	JOINT, T
215	3-668-782-00	o	JOINT, S
216	3-668-785-00	s	BELT (67x2)
217	3-668-826-00	s	RETAINER, PIN, SOLENOID
218	3-668-828-02	o	BRACKET, PS
219	3-672-752-01	o	HOLDER, LED
220	3-703-074-00	s	CAP 3, SHAFT

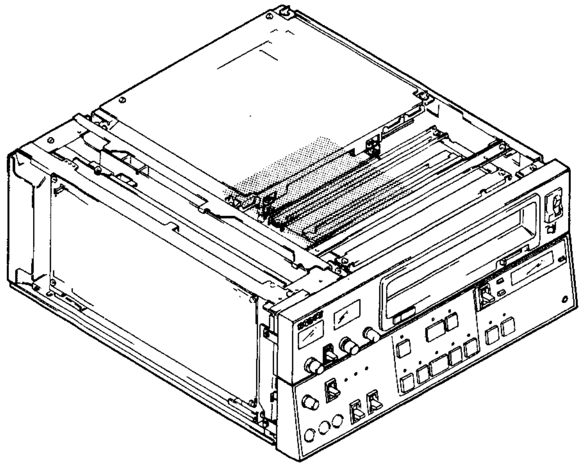
THREADING RING BLOCK

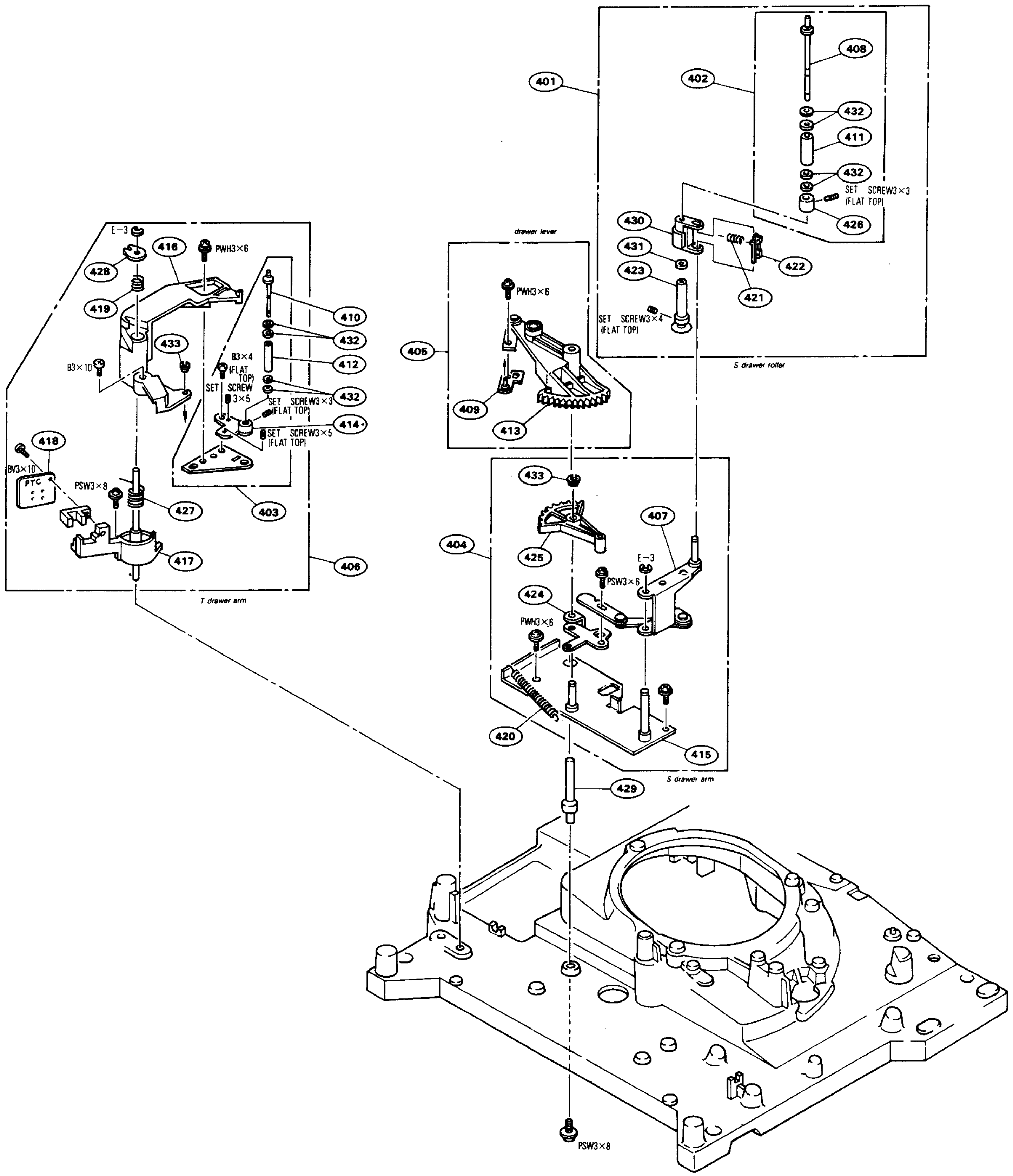



SET SCREW3×8 (CORN TYPE)
PSW2.6×6
B3×12
PSW3×8
PWH3×6
T correction guide (new)
FR detector
threading ring
N2mm dia
E-3
B2×8
PSW3×6
B2.6×3
SET SCREW3×4 (DOUBLE POINT)
gear box
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348

No.	Part No.	SP	Description
301	A-6750-219-A	s	BOX BLOCK ASS'Y, GEAR
302	A-6750-220-A	s	RING BLOCK ASS'Y, MAIN
303	A-6750-226-A	s	PINCH ROLLER BLOCK ASS'Y
304	X-3668-719-0	o	ROLLER ASS'Y, RING
305	X-3668-720-0	o	BASE ASS'Y, ROLLER, PRECEDING
306	X-3668-721-0	o	CHASSIS ASS'Y, GUIDE
307	X-3668-722-0	s	LOCKER ASS'Y, FR
308	X-3668-723-2	o	ARM ASS'Y, GUIDE, T CORRECTION
309	X-3668-724-3	s	SHAFT ASS'Y, ROLLER, PRECEDING
310	X-3668-733-0	s	SHAFT ASS'Y, SR GUIDE
311	X-3668-743-0	s	PULLEY ASS'Y, WORM
312	X-3672-704-1	o	BRACKET ASS'Y, MOTOR
313	X-3672-710-1	o	RING (UPPER) ASS'Y, SUB
314	X-3672-711-1	o	RING (LOWER) ASS'Y, SUB
315	X-3672-718-2	s	SHAFT ASS'Y, GUIDE
316	X-3718-303-1	s	GUIDE ASS'Y, (T), TAPE
317	1-603-737-00	o	PRINTED CIRCUIT BOARD, PH-5
318	1-618-600-11	o	PRINTED CIRCUIT BOARD, LM-13
319	1-622-258-11	o	PRINTED CIRCUIT BOARD, PTC-33
320	3-143-067-00	s	SPRING, TENSION
321	3-437-289-00	s	SPRING, TENSION
322	3-634-196-00	s	SPRING
323	3-668-743-00	o	NUT, PLATE, ROLLER, PRECEDING
324	3-668-745-00	s	SPRING
325	3-668-749-02	o	ARM (A), GUIDE, T CORRECTION
326	3-668-753-00	o	PLATE, ADJUSTMENT, FR LOCKER
327	3-668-754-00	o	SHAFT, GUIDE ARM, T CORRECTION
328	3-668-755-00	o	PLATE, STOPPER SR
329	3-668-900-00	o	BRACKET, T SENSOR
330	3-668-901-00	s	HOLDER, T PHOTO
331	3-668-919-00	s	ROLLER, SR GUIDE
332	3-668-947-00	s	PINION, L
333	3-668-948-00	o	SHAFT WORM
334	3-668-963-00	s	ROLLER, RING
335	3-669-926-01	s	WASHER (3), THRUST
336	3-669-960-00	o	RETAINER, SHAFT
337	3-672-736-01	s	PULLEY, LM
338	3-672-737-01	s	BELT SQUARE
339	3-672-738-01	o	PLATE GROUND SLED
340	3-672-739-01	o	BELT, LM SHIELD
341	3-672-790-01	o	BRAKET, FR DETECTION
342	3-701-437-21	s	WASHER, POLY 2MM DIA., 0.50T
343	3-701-438-11	s	WASHER, POLY 2.5MM DIA., 0.25T
344	3-701-439-21	s	WASHER, POLY 3MM DIA., 0.50T
345	3-701-505-00	s	SET SCREW, DUBLE POINT 3x3
346	3-703-074-00	s	CAP 3, SHAFT
347	3-703-075-00	s	CAP 2, SHAFT
348	1-541-376-11	s	MOTOR, DC (DNR-4700A)

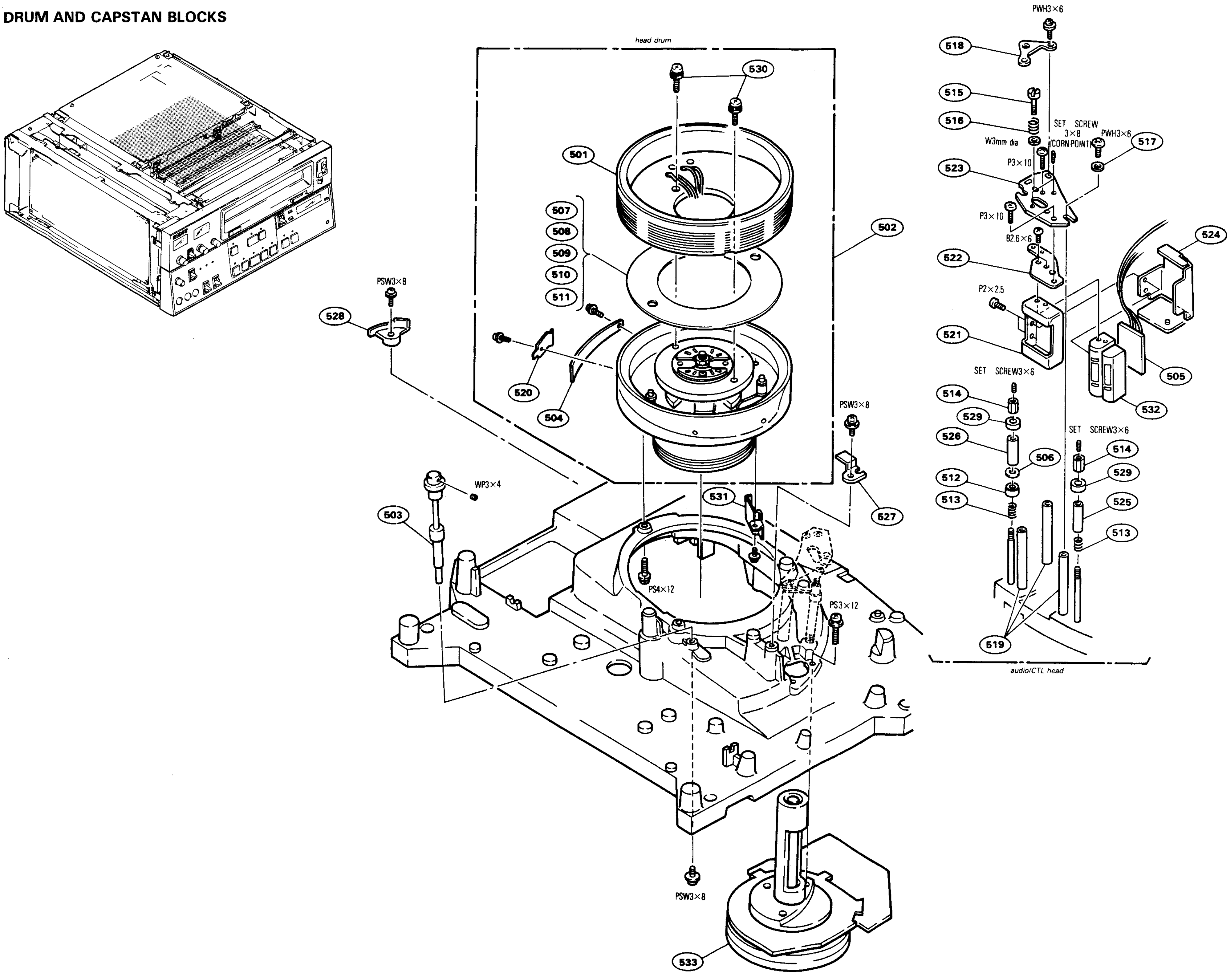
THREADING ARM




401
402
408
432
411
432
SET SCREW3×3 (FLAT TOP)
426
430
431
423
422
421
SET SCREW3×4 (FLAT TOP)
S drawer roller
drawer lever
PWH3×6
405
409
413
E-3
428
416
PWH3×6
419
410
432
433
B3×10
B3×4 (FLAT TOP)
SET SCREW 3×5
412
432
SET SCREW3×3 (FLAT TOP)
414
SET SCREW3×5 (FLAT TOP)
418
BV3×10
PTC
PSW3×8
427
403
417
406
T drawer arm
433
407
404
E-3
425
424
PSW3×6
PWH3×6
420
415
S drawer arm
429
PSW3×8

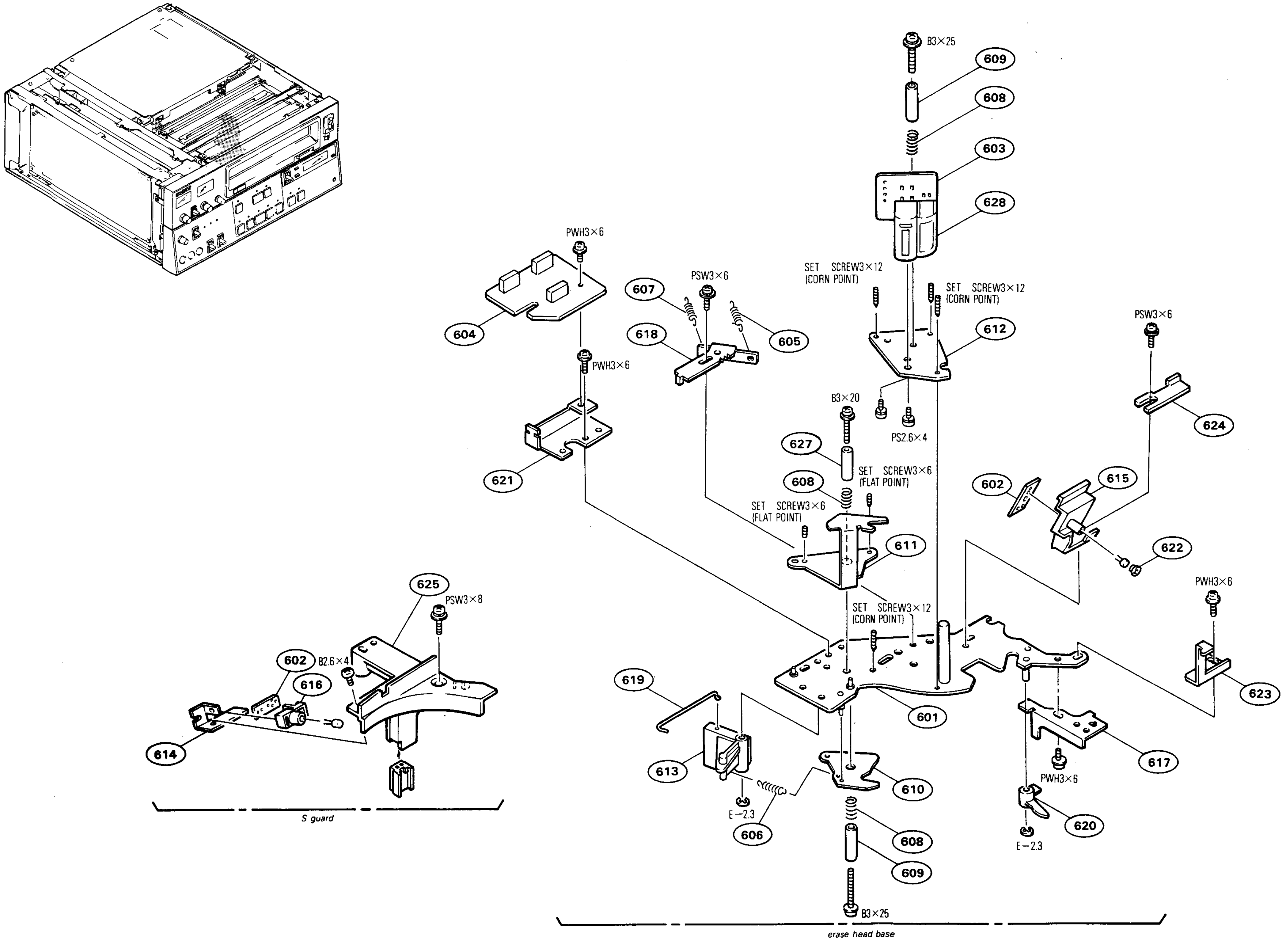
No.	Part No.	SP	Description
401	A-6746-021-B	s	ROLLER BLOCK ASS'Y, S DRAWER
402	A-6746-034-A	s	ROLLER BLOCK ASS'Y, (2) DRAWER
403	A-6746-045-A	s	ROLLER BLOCK ASS'Y, T GUIDE
404	A-6750-201-A	o	ARM BLOCK ASS'Y, S DRAWER
405	A-6750-202-A	o	LEVER BLOCK ASS'Y, DRAWER
406	A-6750-218-A	o	ARM BLOCK ASS'Y, T DRAWER
407	X-3668-711-0	o	ARM ASS'Y, S DRAWER
408	X-3668-712-3	s	SHAFT (2) ASS'Y, ROLLER
409	X-3668-713-0	o	LINK (B) ASS'Y, DRIVING
410	X-3668-716-0	s	SHAFT (3) ASS'Y, ROLLER
411	X-3668-718-0	s	GUIDE ASS'Y, TAPE
412	X-3668-727-0	o	GUIDE ASS'Y, TAPE
413	X-3668-729-0	s	LEVER ASS'Y, DRAWER
414	X-3672-705-1	o	PLATE ASS'Y, GUIDE, T
415	X-3672-706-1	o	BASE ASS'Y, S DRAWER ARM
416	X-3672-708-1	o	ARM ASS'Y, T DRAWER
417	X-3718-305-1	o	RITAINER ASS'Y, ARM, T DRAWER
418	1-622-259-11	o	PRINTED CIRCUIT BOARD, PTC-34
419	3-534-854-00	s	SPRING, COMPRESSION
420	3-540-506-00	s	SPRING, TENSION
421	3-644-718-00	s	SPRING, COMPRESSION
422	3-668-718-00	s	RETAINER, SPRING, S DRAWER
423	3-668-719-00	s	HOLDER (L), S GUIDE
424	3-668-720-00	o	LIMITER, S DRAWER
425	3-668-721-00	s	ARM, S DRIVING
426	3-668-724-00	o	FLANGE (2), LOWER
427	3-668-734-00	o	SPRING
428	3-668-735-00	s	RETAINER, SPRING
429	3-668-760-00	s	SHAFT, DRAWER LEVER
430	3-668-833-00	s	HOLDER (M), GUIDE, S
431	3-669-946-00	s	RING (P4), O
432	3-701-438-01	s	WASHER, POLY 2.5MM DIA., 0.13T
433	3-703-074-00	s	CAP 3, SHAFT

DRUM AND CAPSTAN BLOCKS


head drum
530
501
507
508
509
510
511
502
520
504
PSW3×8
528
503
WP3×4
531
527
PSW3×8
PS4×12
PS3×12
PSW3×8
533
PWH3×6
518
515
516
SET SCREW
3×8
(CORN POINT)
W3mm dia
PWH3×6
517
523
P3×10
P3×10
B2.6×6
524
522
P2×2.5
521
505
532
SET SCREW3×6
514
529
526
506
512
513
SET SCREW3×6
514
529
525
513
519
audio/CTL head

No.	Part No.	SP	Description
501	A-6709-561-A	s	UPPER DRUM ASS'Y, DUR-38-R
502	A-6709-604-A	s	HEAD DRUM ASS'Y, DUH-38B-R
503	A-6746-052-A	s	ROLLER ASS'Y, GUIDE, TAPE
504	1-586-633-00	s	DETECTOR, DEW
505	1-615-924-11	o	PRINTED CIRCUIT BOARD, DUS-92
506	3-534-329-11	s	WASHER, TAPE GUIDE
507	3-630-029-01	s	SPACER, FLANGE (0.01T)
508	3-630-029-11	s	SPACER, FLANGE (0.02T)
509	3-630-029-21	s	SPACER, FLANGE (0.05T)
510	3-630-029-31	s	SPACER, FLANGE (0.1T)
511	3-630-029-41	s	SPACER, FLANGE (0.03T)
512	3-641-612-00	s	GUIDE, TAPE
513	3-641-615-00	s	SPRING, COMPRESSION
514	3-641-616-00	s	NUT, TAPE GUIDE ADJUSTMENT
515	3-641-621-00	s	SCREW, HEAD ADJUSTMENT
516	3-641-622-00	s	SPRING, COMPRESSION
517	3-645-076-00	o	WASHER, M-REEL S
518	3-647-815-00	o	PLATE, ADJUSTMENT, CTL HEAD
519	3-647-816-00	o	POLE, SUPPORT, CTL BRACKET
520	3-655-631-00	o	TERMINAL, GRUND
521	3-655-675-02	o	CASE (F), AU
522	3-655-676-01	o	BRACKET (A), CTL HEAD
523	3-655-677-01	o	BRACKET (B), CTL HEAD
524	3-655-678-03	o	CASE (B), AU
525	3-672-730-01	s	TG-3
526	3-672-731-01	s	TG-4
527	3-672-762-01	o	PIN, DRUM
528	3-672-763-01	o	CAM, P OFFSET PREVENTION
529	3-688-807-01	s	FRANGE, TAPE GUIDE
530	7-672-163-01	s	SCREW
531	3-710-826-01	o	SHIELD, CN
532	8-825-578-21	s	ACE HEAD
533	8-835-258-01	s	MOTOR, DC BHF-1915B

ERASE HEAD BASE

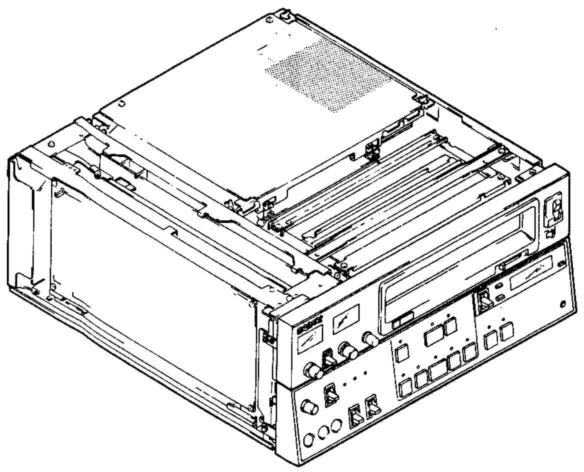

B3×25
609
608
603
628
PWH3×6
PSW3×6
607
SET SCREW3×12 (CORN POINT)
SET SCREW3×12 (CORN POINT)
604
618
605
612
PSW3×6
PWH3×6
B3×20
PS2.6×4
624
627
SET SCREW3×6 (FLAT POINT)
621
608
602
615
SET SCREW3×6 (FLAT POINT)
611
622
625
PSW3×8
SET SCREW3×12 (CORN POINT)
PWH3×6
602
B2.6×4
616
619
601
623
614
613
610
617
PWH3×6
E-2.3
606
608
620
E-2.3
609
B3×25

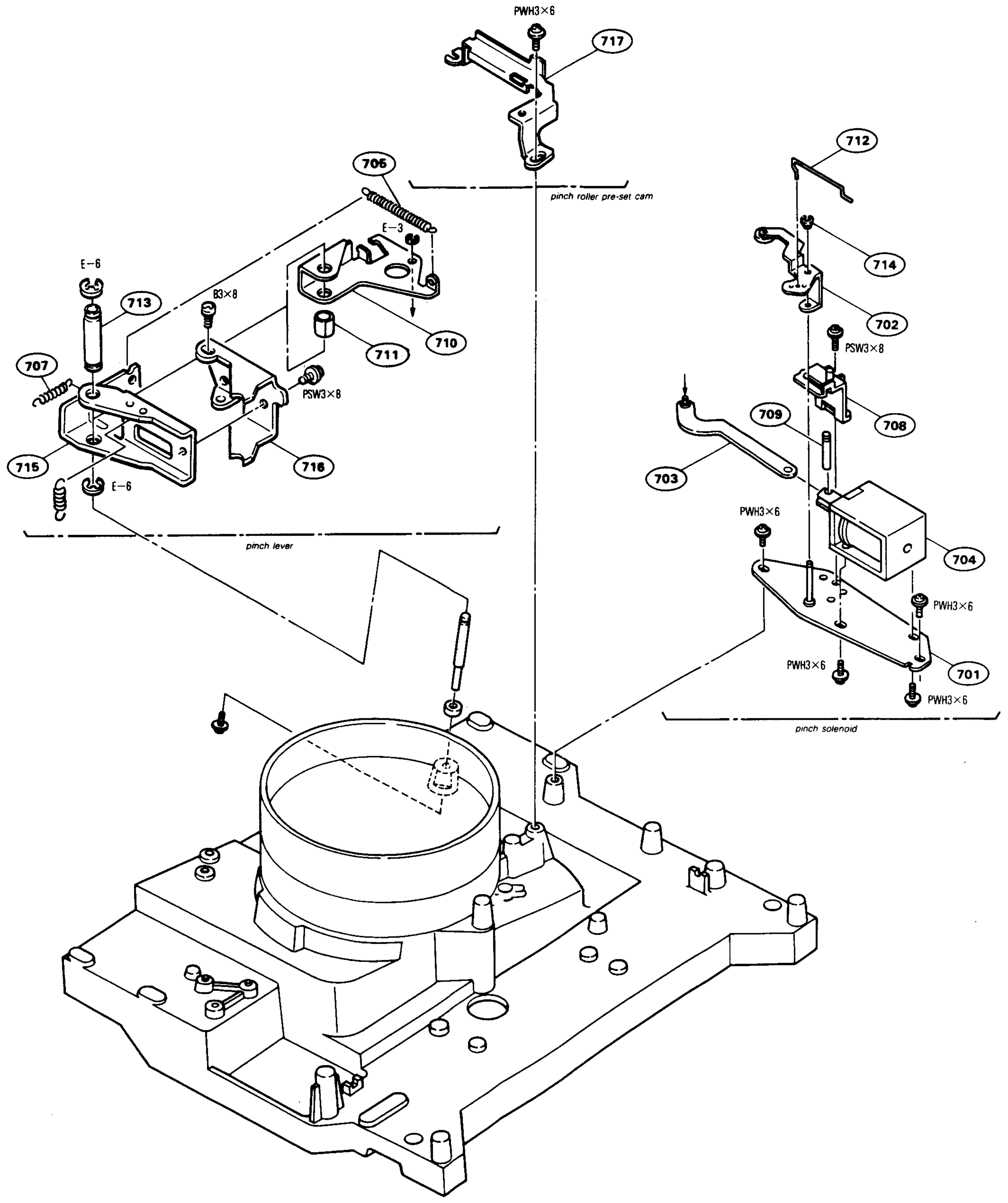
S guard

erase head base

No.	Part No.	SP	Description
601	X-3668-728-0	o	DECK ASS'Y, E HEAD
602	1-603-737-00	o	PRINTED CIRCUIT BOARD, PH-5
603	1-622-223-11	o	PRINTED CIRCUIT BOARD, EC-28
604	1-622-261-11	o	PRINTED CIRCUIT BOARD, DUS-147
605	3-534-238-XX	s	SPRING, TENSION (23T)
606	3-535-531-00	s	SPRING, TENSION
607	3-538-102-00	s	SPRING, TENSION
608	3-637-335-00	s	SPRING, COMPRESSION (C)
609	3-657-086-00	o	SPACER (3x20)
610	3-668-705-00	s	HOLDER (LOWER), S
611	3-668-706-02	s	HOLDER (UPPER), S
612	3-668-707-00	o	TABLE, HEAD, E
613	3-668-708-00	o	ARM, DRIVING, CORRECTION GUIDE
614	3-668-809-02	o	BRACKET, HOLDER
615	3-668-832-02	o	HOLDER (S)
616	3-668-837-00	o	HOLDER, LED
617	3-668-859-00	o	STOPPER, RING
618	3-668-860-00	o	HOOK, SPRING, TENSION REGULATOR
619	3-668-884-03	o	JOINT, RESERVE PRESS
620	3-668-894-00	o	LEVER, RELEASE
621	3-668-962-00	o	BRACKET, AH PC BOARD
622	3-669-920-00	o	COVER, S PHOTO
623	3-669-963-00	o	SPRING, LEAF, GROUND
624	3-669-964-00	o	PLATE, GROUND
625	3-672-764-03	s	GUARD, S
626	3-718-363-01	o	COVER, E HEAD
627	4-855-006-11	s	SPACER (3x14)
628	8-825-513-20	s	HEAD, CTL ERASE (EPP170-58)

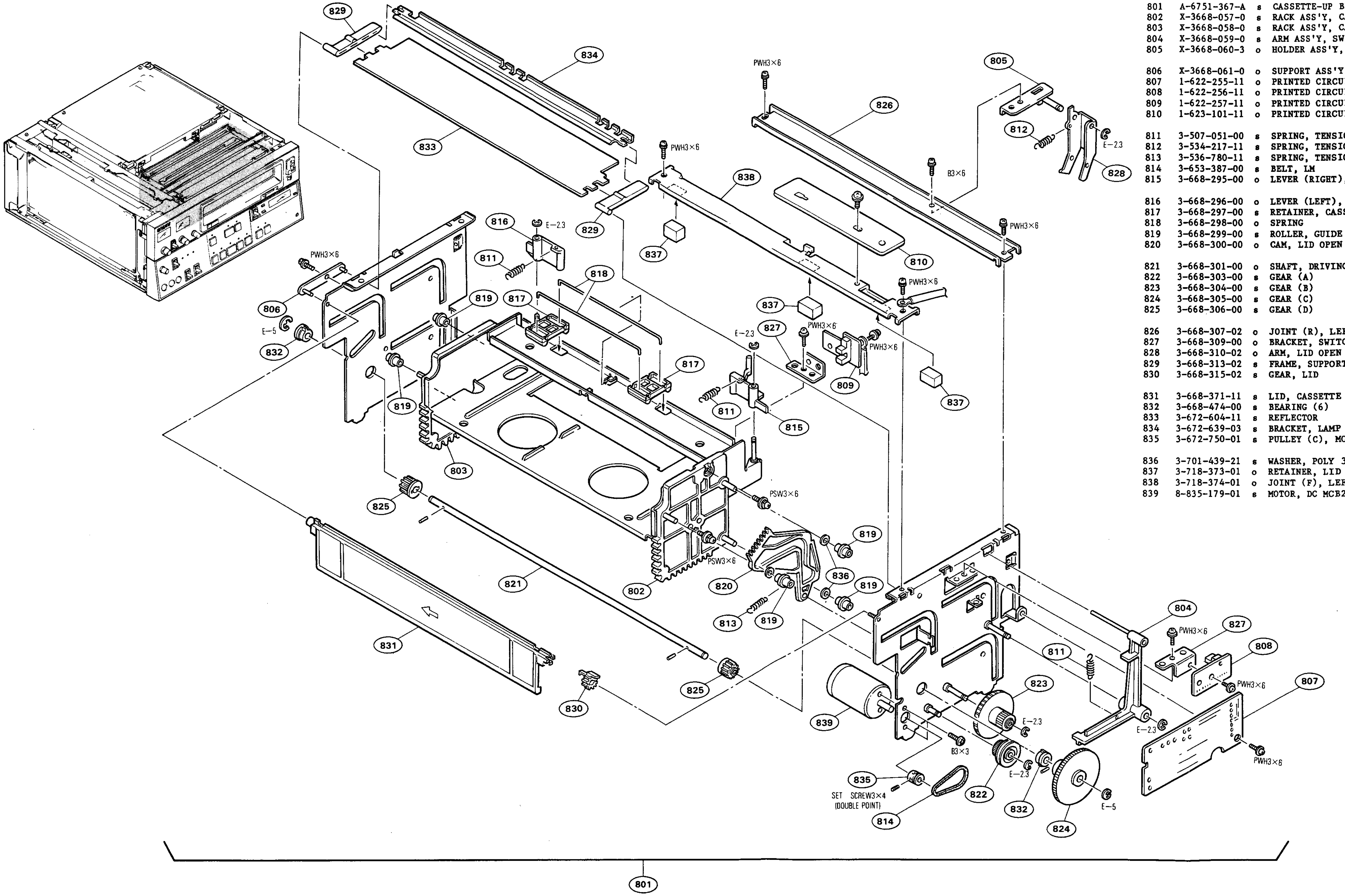
PINCH LEVER AND PINCH SOLENOID BLOCKS




PWH3×6
717
pinch roller pre-set cam
705
E-3
710
711
E-6
713
B3×8
PSW3×8
707
715
716
E-6
pinch lever
712
714
702
PSW3×8
708
709
703
PWH3×6
704
PWH3×6
701
PWH3×6
PWH3×6
pinch solenoid

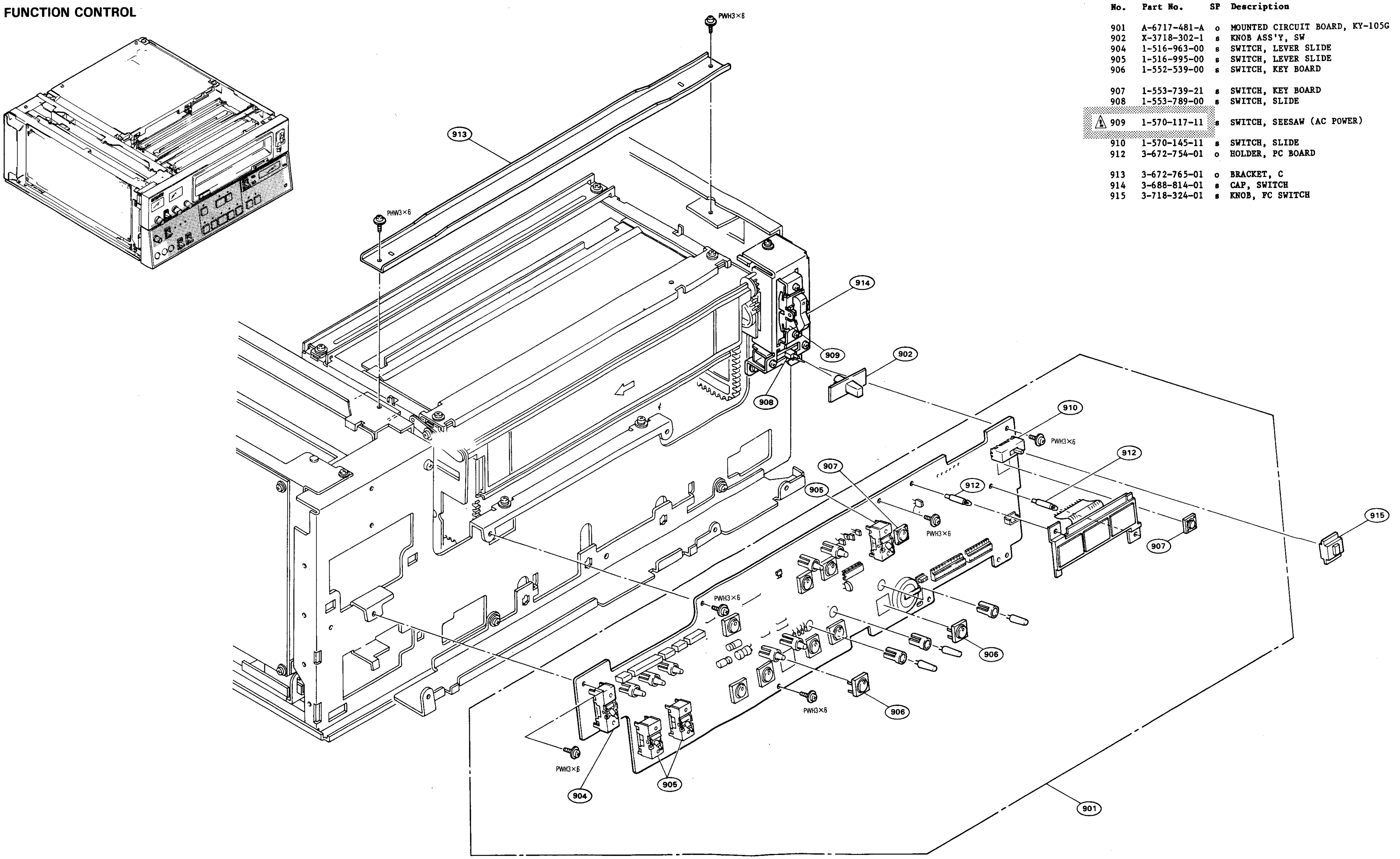
No.	Part No.	SP	Description
701	X-3668-734-0	o	BASE ASS'Y, PINCH PRESS
702	X-3668-735-3	s	LEVER ASS'Y, RESERVE PRESS
703	X-3668-736-0	o	JOINT ASS'Y
704	1-454-416-31	s	SOLENOID, PLUNGER
705	3-610-265-02	s	SPRING
707	3-645-392-00	s	SPRING, TENSION
708	3-668-863-00	s	GUIDE, ARBOR
709	3-668-864-00	s	PIN, SOLENOID
710	3-668-865-00	o	LEVER (B), PINCH PRESS
711	3-668-867-00	o	SPACER (8x9)
712	3-668-884-03	o	JOINT, RESERVE PRESS
713	3-668-896-00	o	SLEEVE, PRESS LEVER, PINCH
714	3-703-074-00	s	CAP 3, SHAFT
715	3-718-364-01	o	LEVER (A), PINCH PRESS
716	3-718-365-01	o	PLATE, PRESS, PINCH
717	3-718-727-01	o	DECK, RESERVE PRESS

CASSETTE-UP COMPARTMENT BLOCK


829
834
833
PWH3×6
826
805
812
E-2.3
828
B3×6
838
PWH3×6
816
E-2.3
829
837
810
811
818
PWH3×6
PWH3×6
806
E-5
832
819
817
837
E-2.3
827
PWH3×6
PWH3×6
817
809
837
819
811
815
803
PSW3×6
825
819
PSW3×6
836
821
802
820
819
813
819
831
804
PWH3×6
827
808
811
823
PWH3×6
807
E-2.3
E-2.3
825
830
839
B3×3
E-2.3
835
SET SCREW3×4
(DOUBLE POINT)
814
822
832
824
E-5
PWH3×6
801

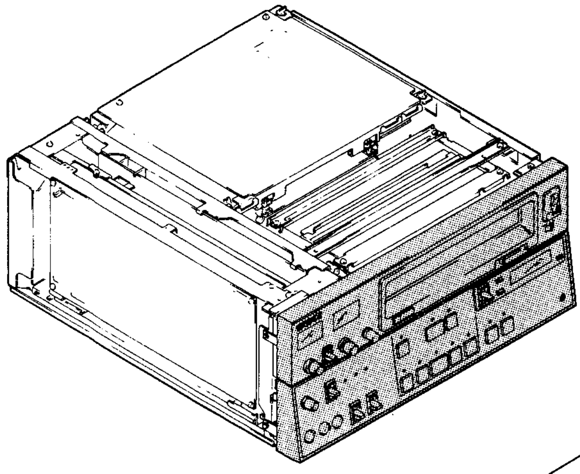
No.	Part No.	SP	Description
801	A-6751-367-A	s	CASSETTE-UP BLOCK ASS'Y
802	X-3668-057-0	s	RACK ASS'Y, CASSETTE COMPARTMENT
803	X-3668-058-0	s	RACK ASS'Y, CASSETTE COMPARTMENT
804	X-3668-059-0	s	ARM ASS'Y, SWITCH, DOWN
805	X-3668-060-3	o	HOLDER ASS'Y, ARM
806	X-3668-061-0	o	SUPPORT ASS'Y, LID
807	1-622-255-11	o	PRINTED CIRCUIT BOARD, CC-31
808	1-622-256-11	o	PRINTED CIRCUIT BOARD, CC-32
809	1-622-257-11	o	PRINTED CIRCUIT BOARD, CC-33
810	1-623-101-11	o	PRINTED CIRCUIT BOARD, LP-41
811	3-507-051-00	s	SPRING, TENSION
812	3-534-217-11	s	SPRING, TENSION
813	3-536-780-11	s	SPRING, TENSION
814	3-653-387-00	s	BELT, LM
815	3-668-295-00	o	LEVER (RIGHT), CASSETTE PUSH-OUT
816	3-668-296-00	o	LEVER (LEFT), CASSETTE PUSH-OUT
817	3-668-297-00	s	RETAINER, CASSETTE
818	3-668-298-00	o	SPRING
819	3-668-299-00	s	ROLLER, GUIDE
820	3-668-300-00	o	CAM, LID OPEN
821	3-668-301-00	o	SHAFT, DRIVING
822	3-668-303-00	s	GEAR (A)
823	3-668-304-00	s	GEAR (B)
824	3-668-305-00	s	GEAR (C)
825	3-668-306-00	s	GEAR (D)
826	3-668-307-02	o	JOINT (R), LEFT & RIGHT
827	3-668-309-00	o	BRACKET, SWITCH
828	3-668-310-02	o	ARM, LID OPEN
829	3-668-313-02	s	FRAME, SUPPORT, REFLECTOR
830	3-668-315-02	s	GEAR, LID
831	3-668-371-11	s	LID, CASSETTE
832	3-668-474-00	s	BEARING (6)
833	3-672-604-11	s	REFLECTOR
834	3-672-639-03	s	BRACKET, LAMP
835	3-672-750-01	s	PULLEY (C), MOTOR
836	3-701-439-21	s	WASHER, POLY 3MM DIA., 0.50T
837	3-718-373-01	o	RETAINER, LID
838	3-718-374-01	o	JOINT (F), LEFT & RIGHT
839	8-835-179-01	s	MOTOR, DC MCB2B15

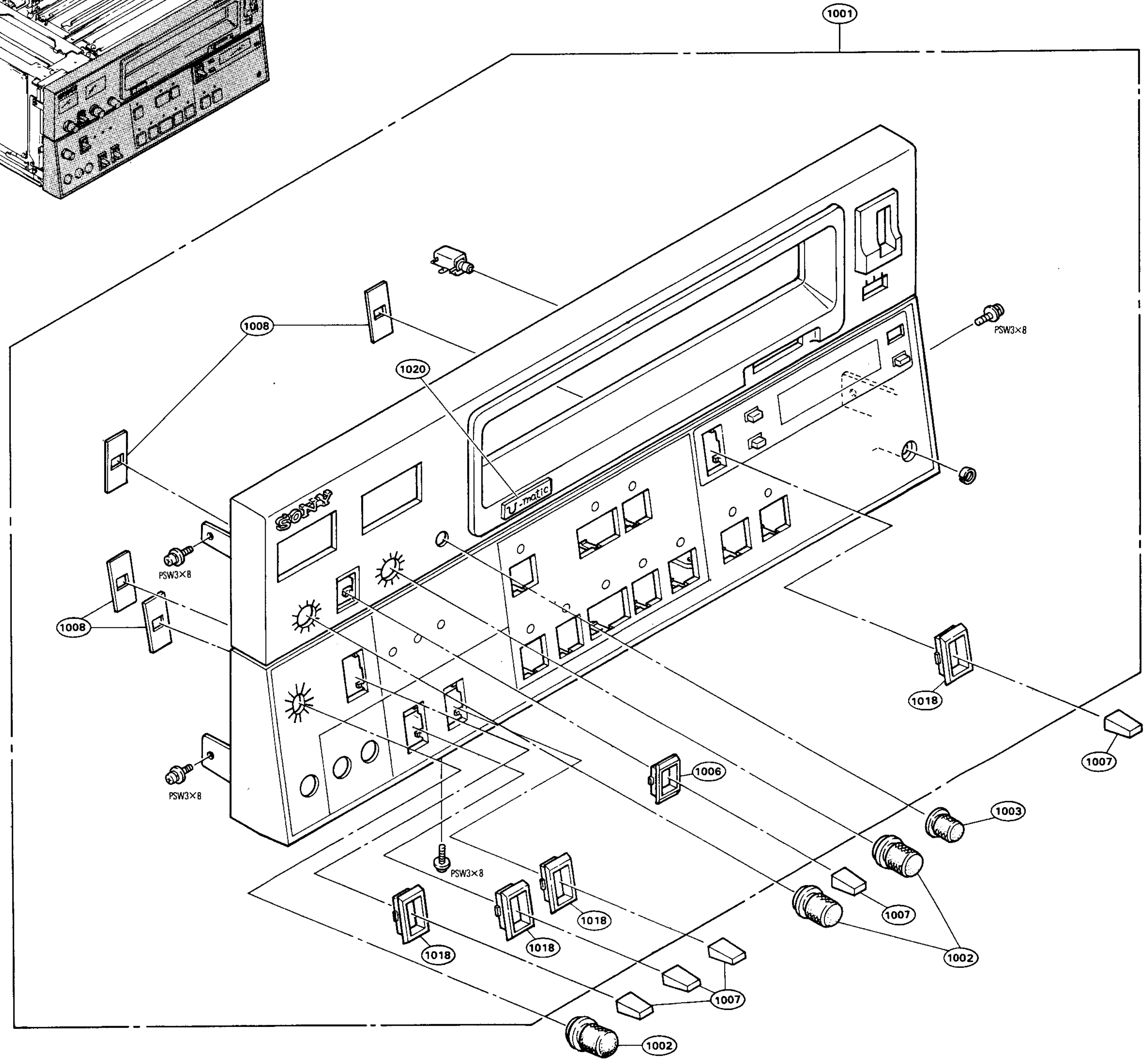
FUNCTION CONTROL

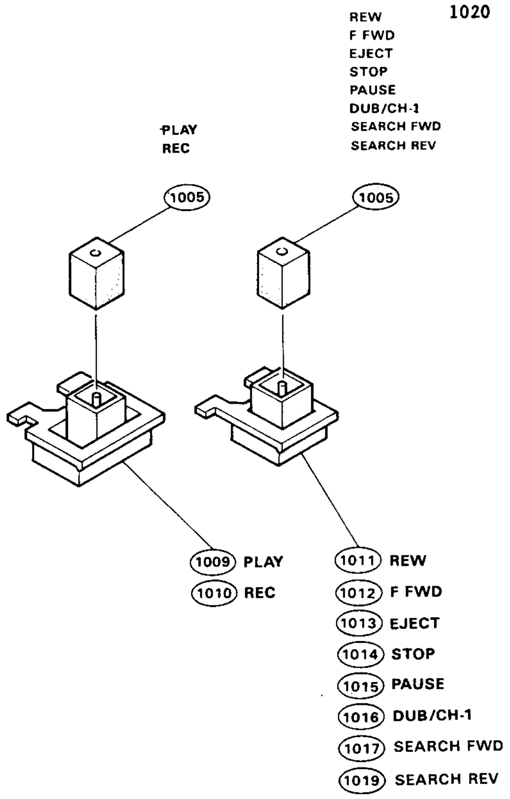

PWH3×6
913
PWH3×6
914
909
902
908
910
PWH3×6
912
907
905
912
PWH3×6
915
907
PWH3×6
906
PWH3×6
906
PWH3×6
904
905
901

No.	Part No.	SP	Description
901	A-6717-481-A	o	MOUNTED CIRCUIT BOARD, KY-105G
902	X-3718-302-1	s	KNOB ASS'Y, SW
904	1-516-963-00	s	SWITCH, LEVER SLIDE
905	1-516-995-00	s	SWITCH, LEVER SLIDE
906	1-552-539-00	s	SWITCH, KEY BOARD
907	1-553-739-21	s	SWITCH, KEY BOARD
908	1-553-789-00	s	SWITCH, SLIDE
⚠ 909	1-570-117-11	s	SWITCH, SEESAW (AC POWER)
910	1-570-145-11	s	SWITCH, SLIDE
912	3-672-754-01	o	HOLDER, PC BOARD
913	3-672-765-01	o	BRACKET, C
914	3-688-814-01	s	CAP, SWITCH
915	3-718-324-01	s	KNOB, FC SWITCH

FRONT PANEL BLOCK

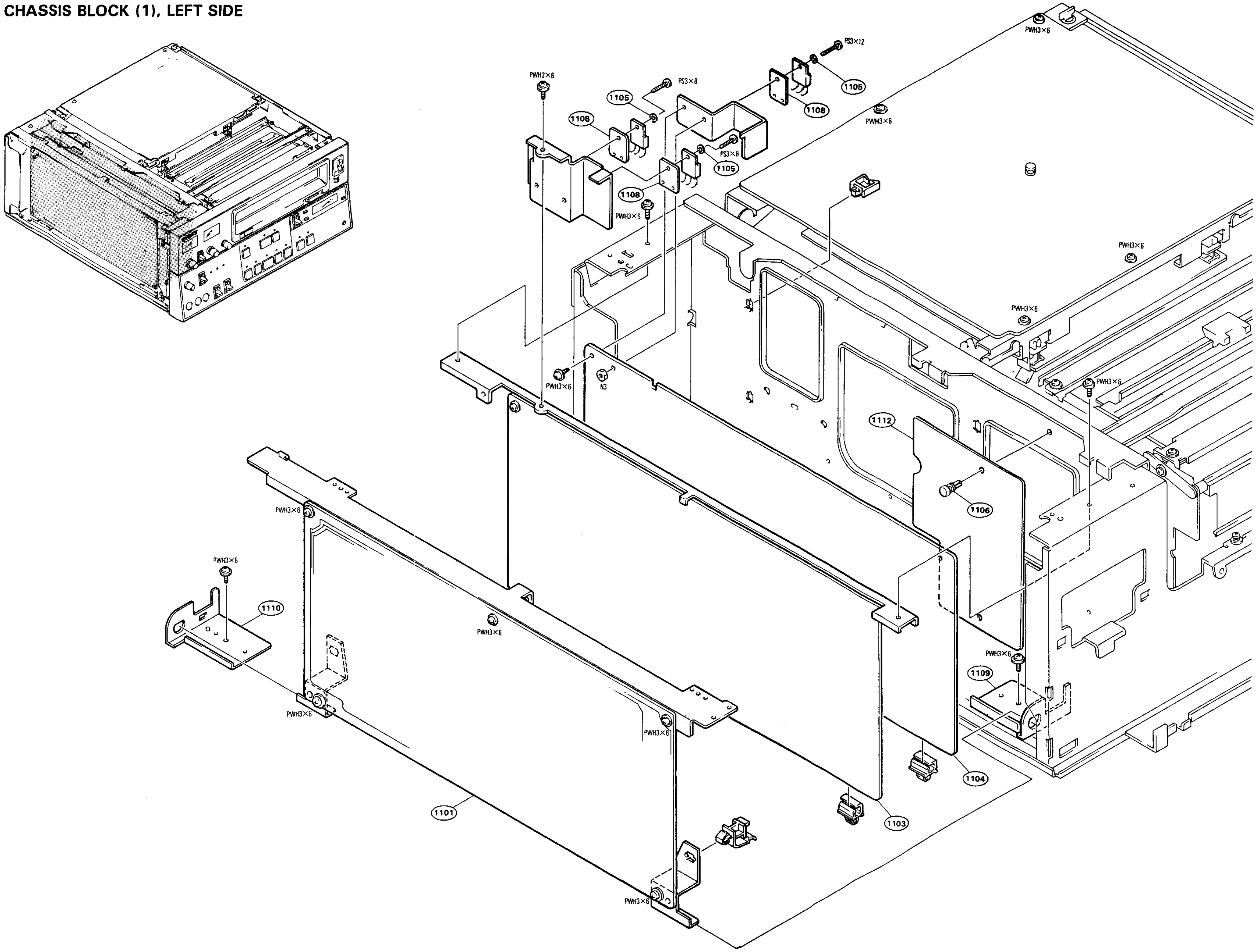



1001
1008
1020
PSW3×8
1008
PSW3×8
PSW3×8
1018
1007
1006
1003
1002
1007
PSW3×8
1018
1018
1018
1007
1002


REW
F FWD
EJECT
STOP
PAUSE
DUB/CH-1
SEARCH FWD
SEARCH REV
PLAY
REC
1005
1005
1009 PLAY
1010 REC
1011 REW
1012 F FWD
1013 EJECT
1014 STOP
1015 PAUSE
1016 DUB/CH-1
1017 SEARCH FWD
1019 SEARCH REV

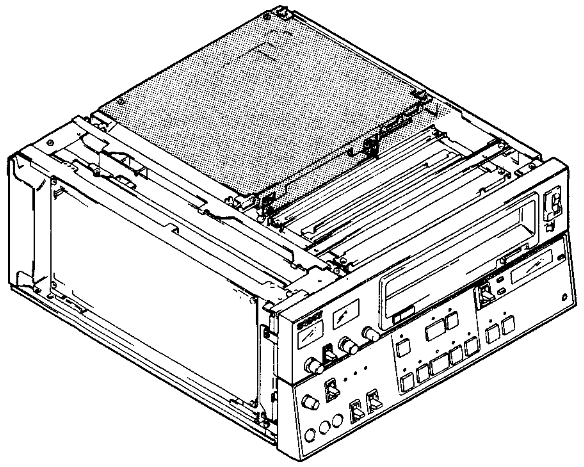
No.	Part No.	SP	Description
1001	A-6704-315-A	o	PANEL ASS'Y, FRONT
1002	X-2112-801-1	s	KNOB ASS'Y, VOL
1003	X-3672-707-1	s	KNOB ASS'Y, VOLUME
1005	2-284-744-00	o	CUSHION (B), KEY
1006	3-668-016-21	o	FRAME (SMALL), ORNAMENTAL
1007	3-668-028-21	s	KNOB (SMALL), LEVER SWITCH
1008	3-669-909-31	o	PLATE, BLIND, LEVER SWITCH
1009	3-672-782-02	s	KEY TOP (A) "PLAY"
1010	3-672-782-11	s	KEY TOP (A) "REC"
1011	3-672-783-02	s	KEY TOP (B) "REW"
1012	3-672-783-12	s	KEY TOP (B) "F FWD"
1013	3-672-783-32	s	KEY TOP (B) "EJECT"
1014	3-672-783-42	s	KEY TOP (B) "STOP"
1015	3-672-783-52	s	KEY TOP (B) "PAUSE"
1016	3-672-783-61	s	KEY TOP (B) "DUB/CH-1"
1017	3-672-783-22	s	KEY TOP (B) "SEARCH FWD"
1018	3-672-786-21	o	ESCUTCHEON (INNER), SLIDE SW
1019	3-672-785-02	s	KEY TOP (D) "SEARCH REV"
1020	3-710-802-01	o	LABEL, U MATIC

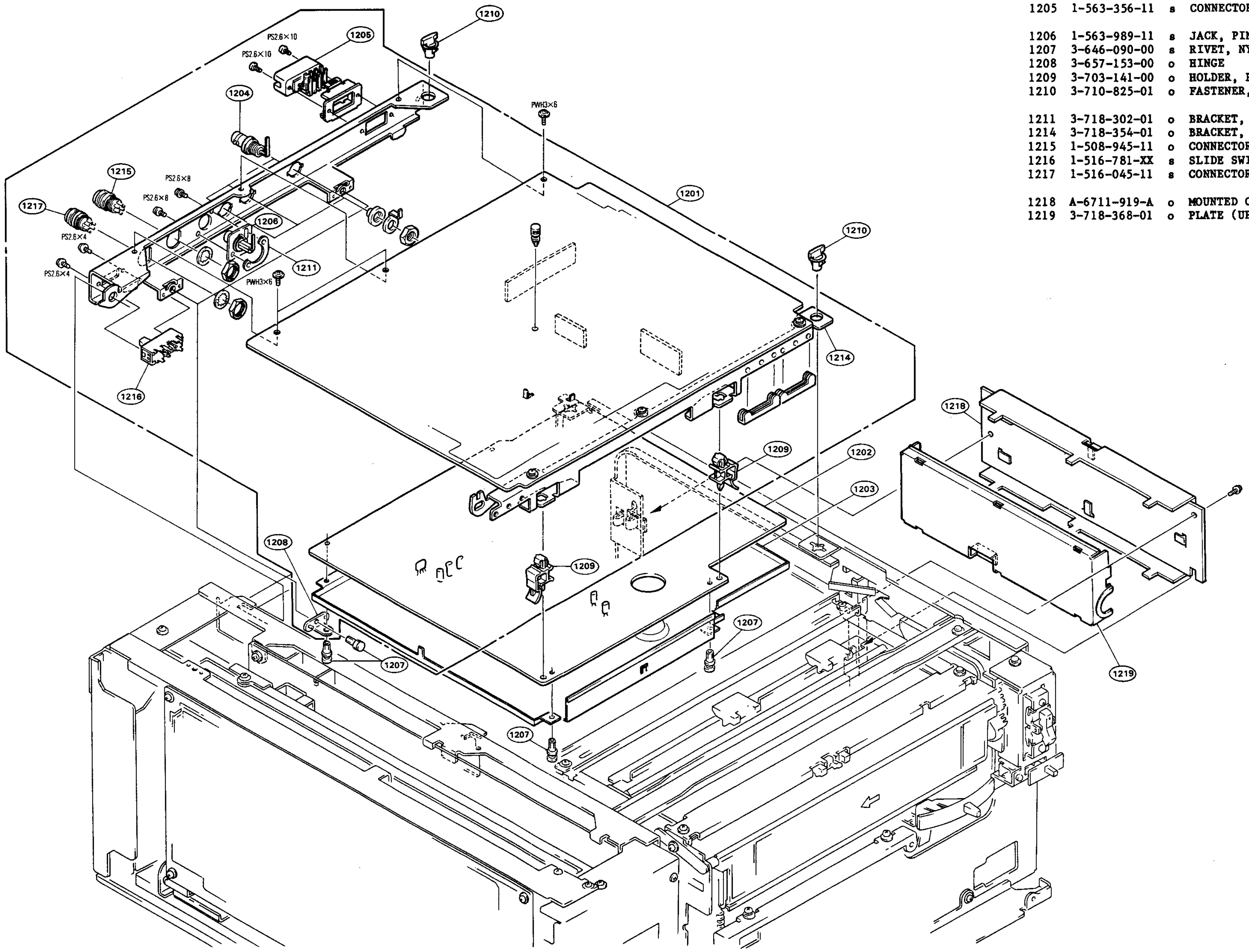
CHASSIS BLOCK (1), LEFT SIDE


PWH3×6
PS3×12
PS3×8
1105
1108
1105
1108
1105
PS3×8
1105
1108
PWH3×6
PWH3×6
PWH3×6
PWH3×6
PWH3×6
PWH3×6
N3
1112
1106
PWH3×6
PWH3×6
1110
PWH3×6
PWH3×6
PWH3×6
PWH3×6
1109
1104
1103
1101
PWH3×6

No.	Part No.	SP	Description
1101	A-6713-316-A	o	MOUNTED CIRCUIT BOARD, AU-82B
1103	A-6715-397-A	o	MOUNTED CIRCUIT BOARD, SV-93G
1104	A-6717-479-A	o	MOUNTED CIRCUIT BOARD, SY-106(1)
1105	2-371-561-00	s	BUSHING (P), INSULATING
1106	3-646-090-00	s	RIVET, NYLON
1108	3-703-037-00	s	INSULATOR, TO-220
1109	3-718-303-01	o	PLATE (A), HINGE, AU
1110	3-718-304-01	o	PLATE (B), HINGE, AU
1112	3-718-370-01	o	INSULATOR, SY

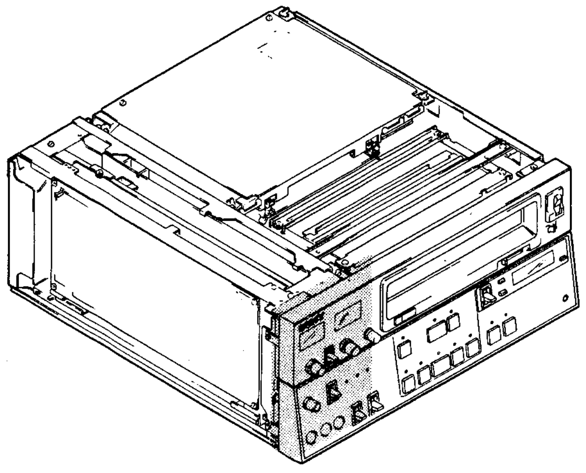
CHASSIS BLOCK (2), BACK SIDE

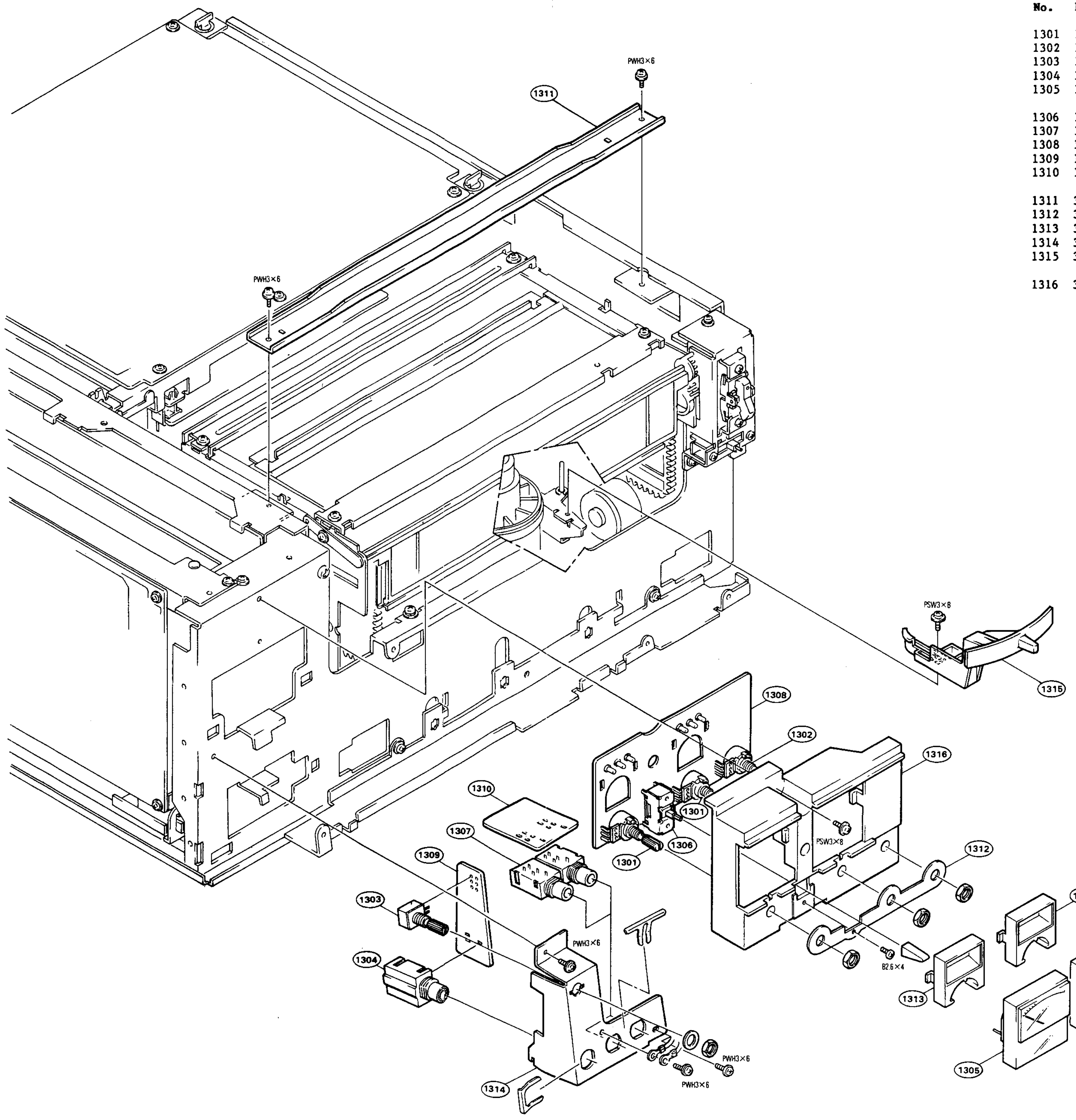



1210
1205
PS2.6×10
PS2.6×10
1204
PWH3×6
1215
PS2.6×8
PS2.6×8
1217
1206
PS2.6×4
PS2.6×4
1211
PWH3×6
1201
1210
1214
1216
1218
1209
1202
1203
1208
1209
1207
1207
1207
1219

No.	Part No.	SP	Description
1201	A-6711-920-A	o	MOUNTED CIRCUIT BOARD, VO-19A
1202	A-6711-921-A	o	MOUNTED CIRCUIT BOARD, CO-12
1203	X-3718-307-1	o	PLATE BLOCK ASS'Y, SHIELD, VR
1204	1-563-354-11	s	CONNECTOR, BNC
1205	1-563-356-11	s	CONNECTOR, MULTI 8P
1206	1-563-989-11	s	JACK, PIN (RCA) 1P
1207	3-646-090-00	s	RIVET, NYLON
1208	3-657-153-00	o	HINGE
1209	3-703-141-00	o	HOLDER, PCB
1210	3-710-825-01	o	FASTENER, PLATE
1211	3-718-302-01	o	BRACKET, PIN JACK
1214	3-718-354-01	o	BRACKET, VR
1215	1-508-945-11	o	CONNECTOR, (R-M)
1216	1-516-781-XX	s	SLIDE SWITCH
1217	1-516-045-11	s	CONNECTOR, (R-F)
1218	A-6711-919-A	o	MOUNTED CIRCUIT BOARD, RP-36A
1219	3-718-368-01	o	PLATE (UPPER), SHIELD, RP

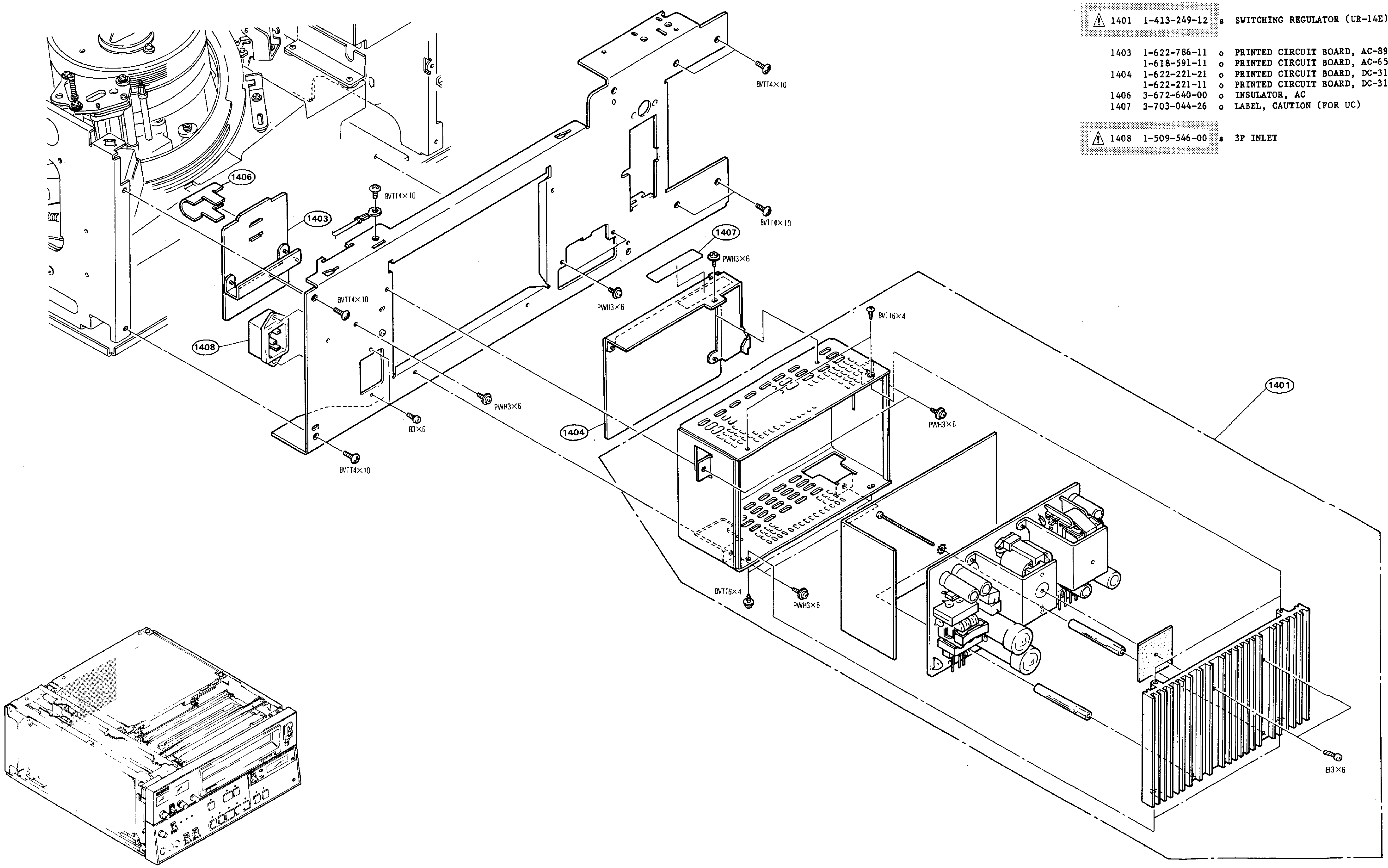
LEVEL CONTROL PANEL




PWH3×6
1311
PWH3×6
PSW3×8
1315
1308
1302
1316
1310
1301
1307
1306
PSW3×8
1301
1312
1309
1313
1303
1305
PWH3×6
B2.6×4
1304
1313
PWH3×6
PWH3×6
1314
1305

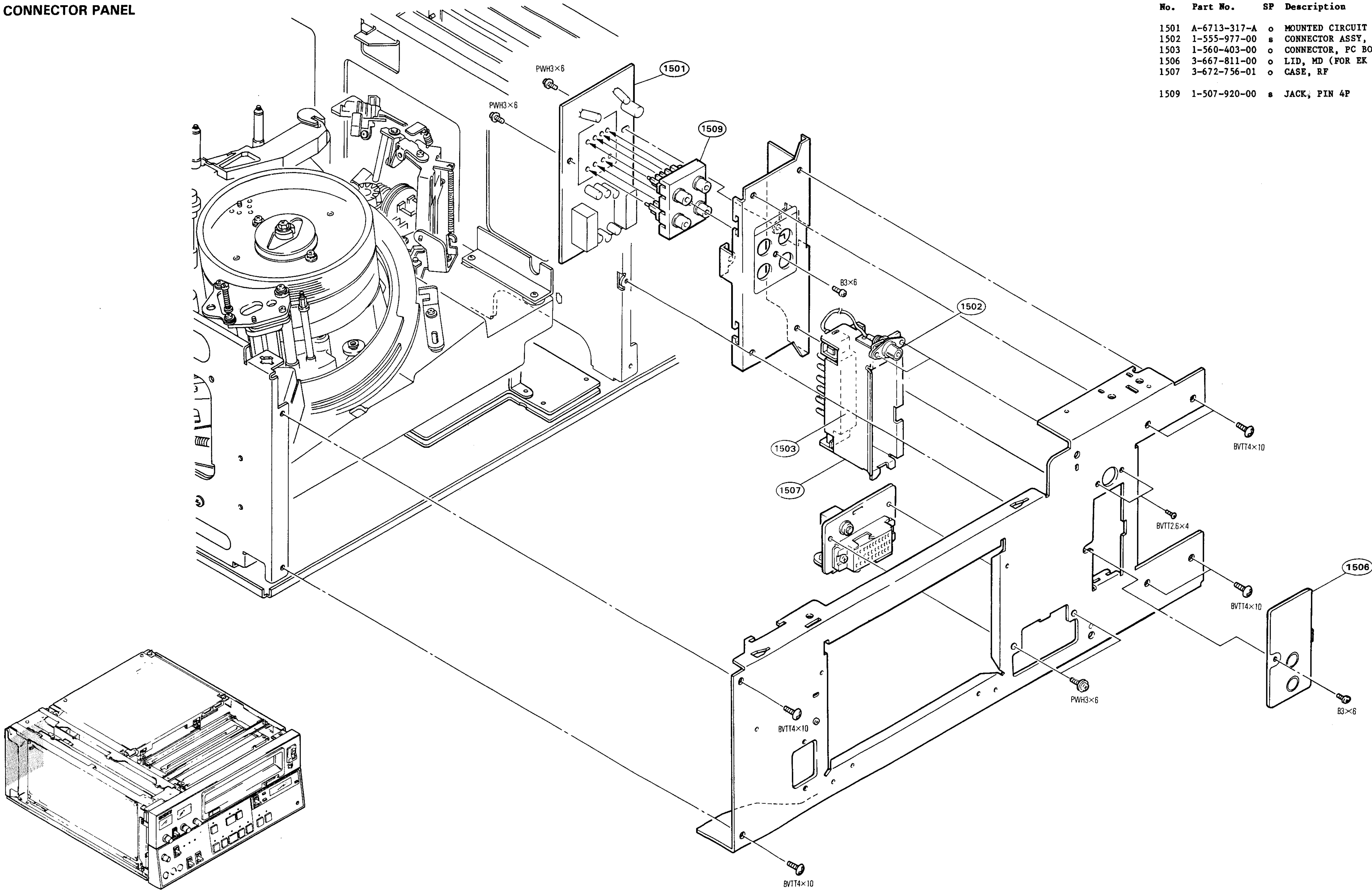
No.	Part No.	SP	Description
1301	1-237-701-11	s	RES, VAR CARBON 5K
1302	1-237-702-11	s	RES, VAR CARBON 100K
1303	1-237-703-11	s	RES, VAR CARBON 2K/2K
1304	1-507-854-00	s	JACK, LARGE TYPE
1305	1-520-393-00	s	METER, AUDIO
1306	1-553-003-00	s	SWITCH, LEVER SLIDE
1307	1-563-988-11	s	JACK, LARGE TYPE 2P
1308	1-622-219-11	o	PRINTED CIRCUIT BOARD, MT-29
1309	1-622-220-11	o	PRINTED CIRCUIT BOARD, HP-30
1310	1-622-222-11	o	PRINTED CIRCUIT BOARD, MC-28
1311	3-672-765-01	o	BRACKET, C
1312	3-718-305-01	o	PLATE (MT), GROUND
1313	3-718-306-01	o	HOLDER, LED
1314	3-718-331-01	o	BRACKET, HEAD PHONE
1315	3-718-337-01	s	LEVER, SKEW
1316	3-718-341-01	o	PANEL, METER

SWITCHING REGULATOR


1406
BVTT4×10
1403
BVTT4×10
1407
PWH3×6
BVTT4×10
PWH3×6
1408
BVTT4×10
BVTT6×4
PWH3×6
B3×6
1404
PWH3×6
1401
BVTT4×10
BVTT6×4
PWH3×6
B3×6

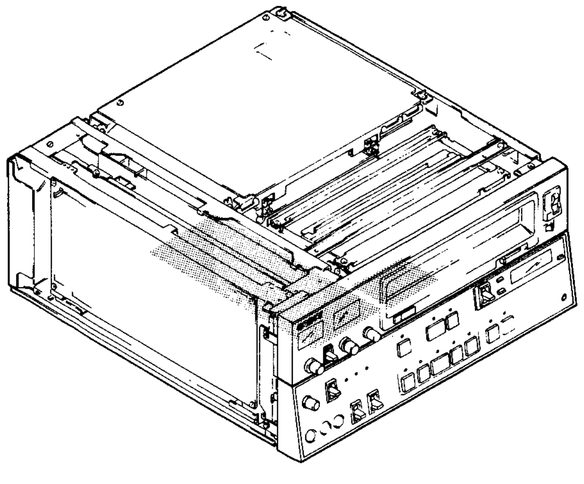
No.	Part No.	SP	Description
⚠ 1401	1-413-249-12	s	SWITCHING REGULATOR (UR-14E)
1403	1-622-786-11	o	PRINTED CIRCUIT BOARD, AC-89 (FOR EK)
	1-618-591-11	o	PRINTED CIRCUIT BOARD, AC-65 (FOR UC)
1404	1-622-221-21	o	PRINTED CIRCUIT BOARD, DC-31A (FOR EK)
	1-622-221-11	o	PRINTED CIRCUIT BOARD, DC-31 (FOR UC)
1406	3-672-640-00	o	INSULATOR, AC
1407	3-703-044-26	o	LABEL, CAUTION (FOR UC)
⚠ 1408	1-509-546-00	s	3P INLET

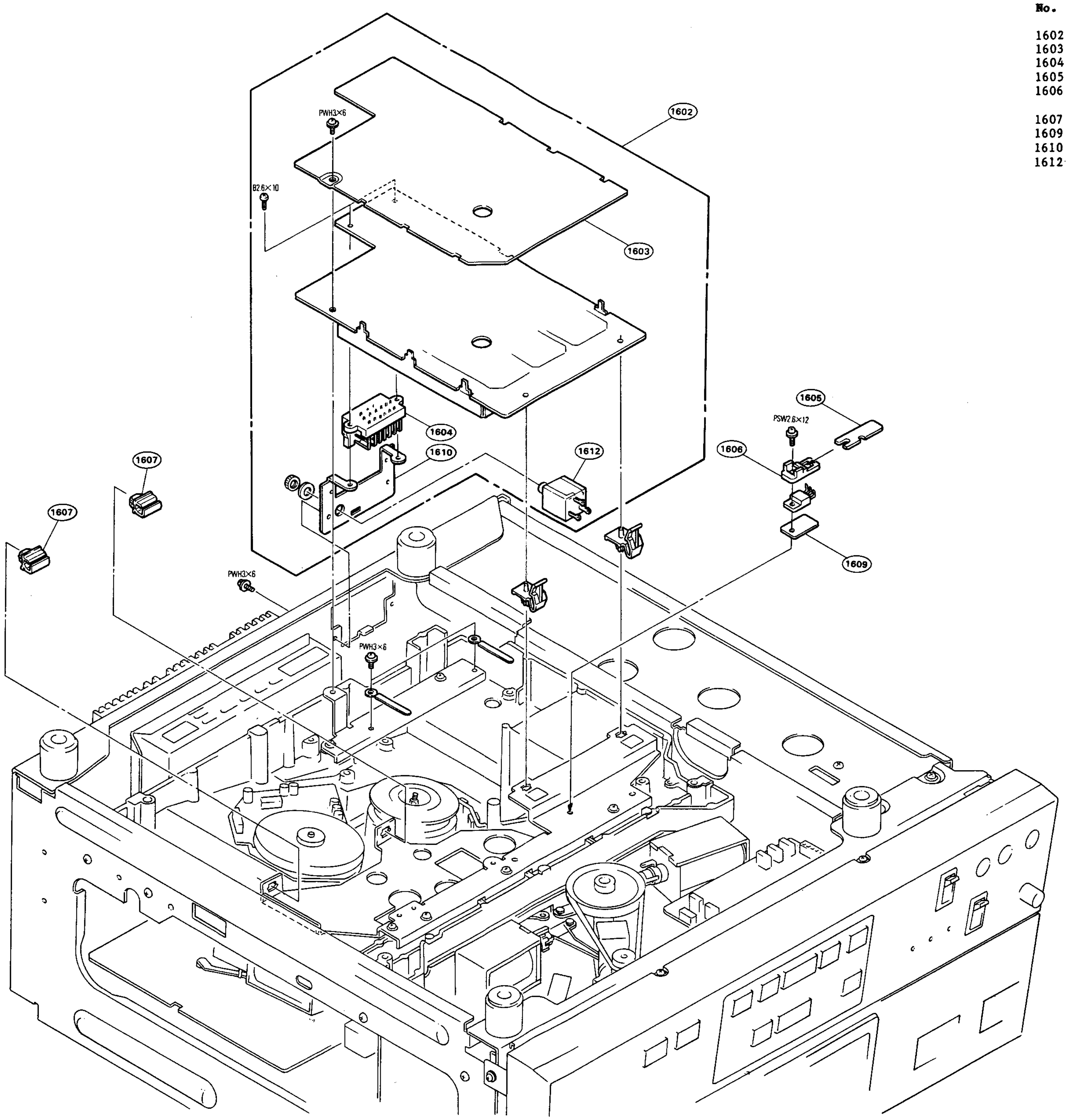
CONNECTOR PANEL


PWH3×6
PWH3×6
1501
1509
B3×6
1502
1503
1507
BVTT4×10
BVTT2.6×4
BVTT4×10
1506
PWH3×6
B3×6
BVTT4×10
BVTT4×10

No.	Part No.	SP	Description
1501	A-6713-317-A	o	MOUNTED CIRCUIT BOARD, CP-128
1502	1-555-977-00	s	CONNECTOR ASSY, DIN
1503	1-560-403-00	o	CONNECTOR, PC BOARD
1506	3-667-811-00	o	LID, MD (FOR EK ONLY)
1507	3-672-756-01	o	CASE, RF
1509	1-507-920-00	s	JACK, PIN 4P

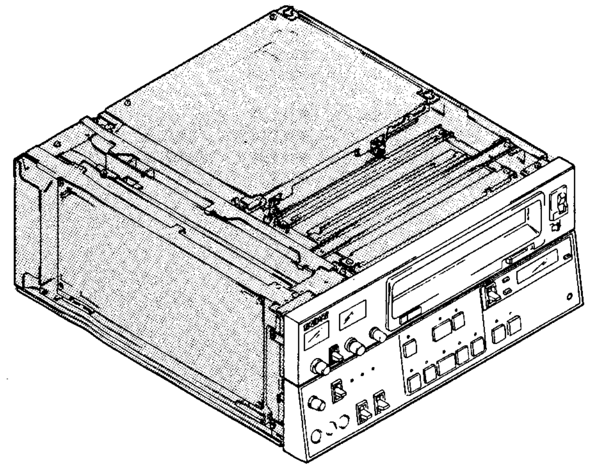
CHASSIS BLOCK (3), BOTTOM

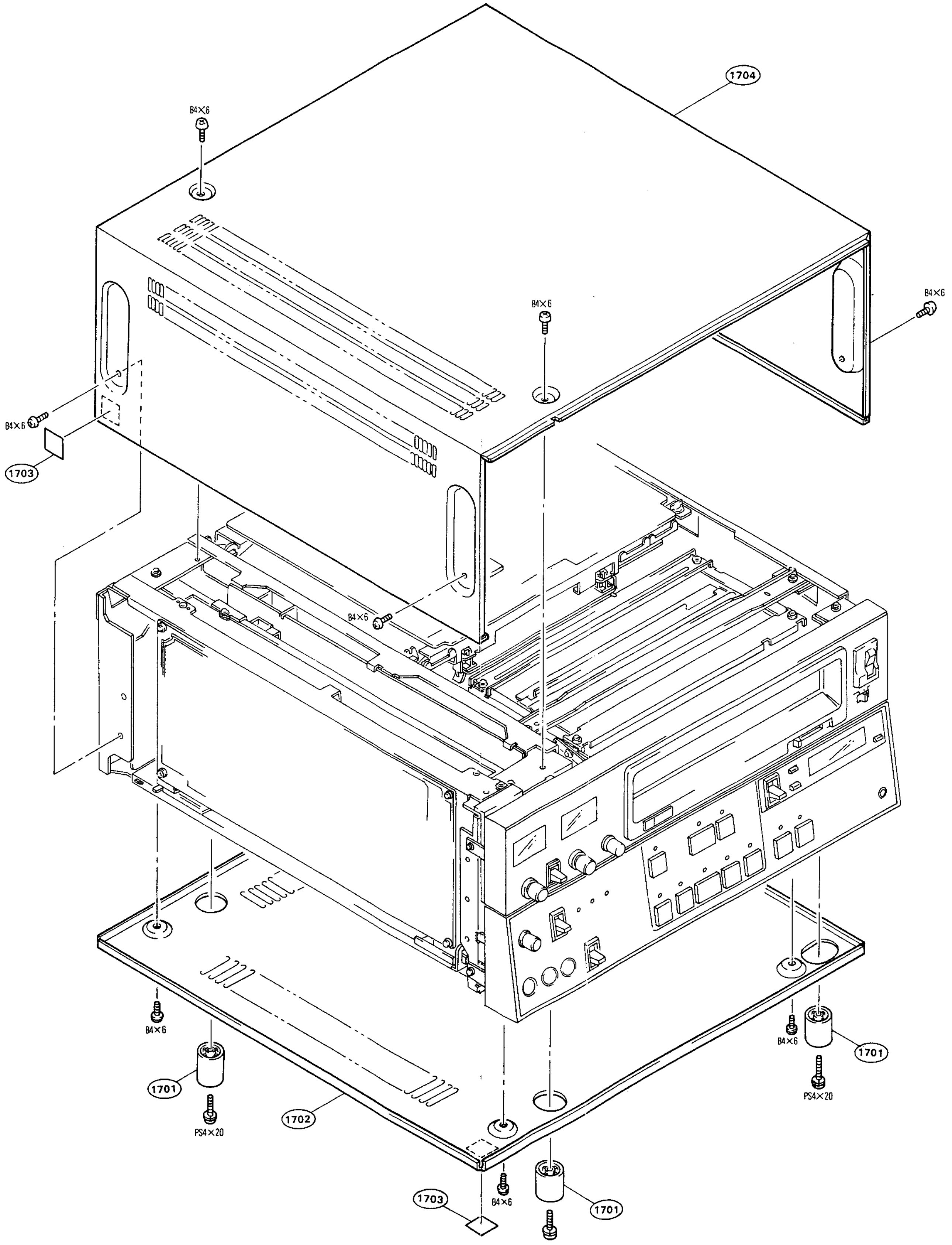



PWH3×6
B2.6×10
1602
1603
1604
1610
1612
1607
1607
PWH3×6
PWH3×6
1605
PSW2.6×12
1606
1609

No.	Part No.	SP	Description
1602	A-6717-450-B	o	MOUNTED CIRCUIT BOARD, IF-132
1603	X-3718-306-1	o	PLATE BLOCK ASS'Y, SHIELD IF
1604	1-566-615-11	s	CONNECTOR, SQUARE 33P
1605	1-605-018-00	o	PRINTED CIRCUIT BOARD, PT-9
1606	3-669-904-00	o	HOLDER, PT
1607	3-703-072-00	o	HOLDER, PCB
1609	3-703-207-11	s	INSULATOR, TO-220
1610	3-718-321-01	o	BRACKET, CONNECTOR
1612	1-562-900-11	s	JACK

ORNAMENTAL PANEL BLOCK




1704
B4×6
B4×6
B4×6
B4×6
1703
B4×6
B4×6
B4×6
1701
PS4×20
1702
1703
B4×6
1701
B4×6
1701
PS4×20

No.	Part No.	SP	Description
1701	3-642-656-01	s	LEG
1702	3-672-766-01	o	BOARD, BOTTOM
1703	3-703-079-31	o	LABEL, CAUTION (BACK) (FOR EK)
	3-703-848-01	o	LABEL (N), SUB CAUTION (FOR UC)
1704	3-718-347-01	o	CASE, U

15-3. ELECTRICAL PARTS LIST

General Purpose Electrical Parts List

Parts that are not listed in the "reference numbers order list" are shown in following list.
Reference numbers are omitted.

CAPACITOR

.MYLAR

Part No.	SP	Description
1-130-467-00	s	CAP, MYLAR 470pF 5% 50V
1-130-468-00	s	CAP, MYLAR 560pF 5% 50V
1-130-469-00	s	CAP, MYLAR 680pF 5% 50V
1-130-470-00	s	CAP, MYLAR 820pF 5% 50V
1-130-471-00	s	CAP, MYLAR 1000pF 5% 50V
1-130-472-00	s	CAP, MYLAR 1200pF 5% 50V
1-130-473-00	s	CAP, MYLAR 1500pF 5% 50V
1-130-474-00	s	CAP, MYLAR 1800pF 5% 50V
1-130-475-00	s	CAP, MYLAR 2200pF 5% 50V
1-130-476-00	s	CAP, MYLAR 2700pF 5% 50V
1-130-477-00	s	CAP, MYLAR 3300pF 5% 50V
1-130-478-00	s	CAP, MYLAR 3900pF 5% 50V
1-130-479-00	s	CAP, MYLAR 4700pF 5% 50V
1-130-480-00	s	CAP, MYLAR 5600pF 5% 50V
1-130-481-00	s	CAP, MYLAR 6800pF 5% 50V
1-130-482-00	s	CAP, MYLAR 8200pF 5% 50V
1-130-483-00	s	CAP, MYLAR 0.01 5% 50V
1-130-484-00	s	CAP, MYLAR 0.012 5% 50V
1-130-485-00	s	CAP, MYLAR 0.015 5% 50V
1-130-486-00	s	CAP, MYLAR 0.018 5% 50V
1-130-487-00	s	CAP, MYLAR 0.022 5% 50V
1-130-488-00	s	CAP, MYLAR 0.027 5% 50V
1-130-489-00	s	CAP, MYLAR 0.033 5% 50V
1-130-490-11	s	CAP, MYLAR 0.039 5% 50V
1-130-491-00	s	CAP, MYLAR 0.047 5% 50V
1-130-492-11	s	CAP, MYLAR 0.056 5% 50V
1-130-493-00	s	CAP, MYLAR 0.068 5% 50V
1-130-494-11	s	CAP, MYLAR 0.082 5% 50V
1-130-495-00	s	CAP, MYLAR 0.1 5% 50V
1-130-496-00	s	CAP, MYLAR 0.12 5% 50V
1-130-497-00	s	CAP, MYLAR 0.15 5% 50V
1-130-498-00	s	CAP, MYLAR 0.18 5% 50V
1-130-499-00	s	CAP, MYLAR 0.22 5% 50V
1-136-502-11	s	CAP, MYLAR 0.33 5% 50V

.MICA,SILVERED

Part No.	SP	Description
1-107-019-00	s	CAP, MICA 1.0pF ±0.5pF 500V
1-107-039-00	s	CAP, MICA 1.2pF ±0.5pF 500V
1-107-040-00	s	CAP, MICA 1.5pF ±0.5pF 500V
1-107-041-00	s	CAP, MICA 1.8pF ±0.5pF 500V
1-107-042-00	s	CAP, MICA 2.2pF ±0.5pF 500V
1-107-043-00	s	CAP, MICA 2.7pF ±0.5pF 500V
1-107-044-00	s	CAP, MICA 3.3pF ±0.5pF 500V
1-107-045-00	s	CAP, MICA 3.9pF ±0.5pF 500V
1-107-046-00	s	CAP, MICA 4.7pF ±0.5pF 500V
1-107-026-00	s	CAP, MICA 5.1pF ±0.5pF 500V
1-107-047-00	s	CAP, MICA 5.6pF ±0.5pF 500V
1-107-048-00	s	CAP, MICA 6.8pF ±0.5pF 500V
1-107-049-00	s	CAP, MICA 8.2pF ±0.5pF 500V
1-107-202-00	s	CAP, MICA 10pF 5% 500V
1-107-203-00	s	CAP, MICA 11pF 5% 500V
1-107-204-00	s	CAP, MICA 12pF 5% 500V
1-107-205-00	s	CAP, MICA 13pF 5% 500V
1-107-206-00	s	CAP, MICA 15pF 5% 500V
1-107-207-00	s	CAP, MICA 16pF 5% 500V
1-107-208-00	s	CAP, MICA 18pF 5% 500V
1-107-209-00	s	CAP, MICA 20pF 5% 500V
1-107-210-00	s	CAP, MICA 22pF 5% 500V
1-107-211-00	s	CAP, MICA 24pF 5% 500V
1-107-157-00	s	CAP, MICA 27pF 5% 500V
1-107-158-00	s	CAP, MICA 30pF 5% 500V
1-107-159-00	s	CAP, MICA 33pF 5% 500V
1-107-074-00	s	CAP, MICA 36pF 5% 50V
1-107-075-00	s	CAP, MICA 39pF 5% 50V
1-107-076-00	s	CAP, MICA 43pF 5% 50V
1-107-077-00	s	CAP, MICA 47pF 5% 50V
1-107-164-00	s	CAP, MICA 51pF 5% 500V
1-107-165-00	s	CAP, MICA 56pF 5% 500V
1-107-166-00	s	CAP, MICA 62pF 5% 500V
1-107-036-00	s	CAP, MICA 68pF 5% 500V
1-107-167-00	s	CAP, MICA 75pF 5% 500V
1-107-083-00	s	CAP, MICA 82pF 5% 50V
1-107-084-00	s	CAP, MICA 91pF 5% 50V
1-107-085-00	s	CAP, MICA 100pF 5% 50V
1-107-086-00	s	CAP, MICA 110pF 5% 50V
1-107-087-00	s	CAP, MICA 120pF 5% 50V
1-109-538-00	s	CAP, MICA 130pF 5% 100V
1-109-539-00	s	CAP, MICA 150pF 5% 100V
1-107-090-00	s	CAP, MICA 160pF 5% 50V
1-109-540-00	s	CAP, MICA 180pF 5% 100V
1-109-541-00	s	CAP, MICA 200pF 5% 100V
1-109-542-00	s	CAP, MICA 220pF 5% 100V
1-109-545-00	s	CAP, MICA 270pF 5% 100V
1-109-547-00	s	CAP, MICA 330pF 5% 100V
1-109-549-00	s	CAP, MICA 390pF 5% 100V
1-109-633-00	s	CAP, MICA 470pF 2% 500V
1-109-555-00	s	CAP, MICA 560pF 5% 100V
1-109-635-00	s	CAP, MICA 470pF 2% 500V

Part No.	SP	Description
.ELECTROLYTIC		
1-124-902-00	s	CAP, ELECT 0.47 20% 50V
1-124-791-11	s	CAP, ELECT 1.0 20% 100V
1-124-925-11	s	CAP, ELECT 2.2 20% 100V
1-123-382-00	s	CAP, ELECT 3.3 20% 100V
1-124-927-00	s	CAP, ELECT 4.7 20% 100V
1-123-875-91	s	CAP, ELECT 10 20% 50V
1-124-915-11	s	CAP, ELECT 10 20% 63V
1-124-667-11	s	CAP, ELECT 10 20% 100V
1-124-908-11	s	CAP, ELECT 22 20% 50V
1-124-916-11	s	CAP, ELECT 22 20% 63V
1-124-929-11	s	CAP, ELECT 22 20% 100V
1-124-963-11	s	CAP, ELECT 33 20% 16V
1-124-482-11	s	CAP, ELECT 33 20% 35V
1-124-917-11	s	CAP, ELECT 33 20% 63V
1-124-930-11	s	CAP, ELECT 33 20% 100V
1-124-446-11	s	CAP, ELECT 47 20% 10V
1-124-477-11	s	CAP, ELECT 47 20% 25V
1-124-910-11	s	CAP, ELECT 47 20% 50V
1-124-918-11	s	CAP, ELECT 47 20% 63V
1-124-931-11	s	CAP, ELECT 47 20% 100V
1-124-443-00	s	CAP, ELECT 100 20% 10V
1-126-101-11	s	CAP, ELECT 100 20% 16V
1-124-478-11	s	CAP, ELECT 100 20% 25V
1-124-122-11	s	CAP, ELECT 100 20% 50V
1-124-572-11	s	CAP, ELECT 100 20% 63V
1-123-605-00	s	CAP, ELECT 100 20% 100V
1-124-444-00	s	CAP, ELECT 220 20% 10V
1-124-120-11	s	CAP, ELECT 220 20% 25V
1-124-484-11	s	CAP, ELECT 220 20% 35V
1-124-911-11	s	CAP, ELECT 220 20% 50V
1-124-919-51	s	CAP, ELECT 220 20% 63V
1-124-628-11	s	CAP, ELECT 220 20% 100V
1-124-442-00	s	CAP, ELECT 330 20% 6.3V
1-124-604-00	s	CAP, ELECT 330 20% 10V
1-124-119-00	s	CAP, ELECT 330 20% 16V
1-124-479-11	s	CAP, ELECT 330 20% 25V
1-124-485-11	s	CAP, ELECT 330 20% 35V
1-124-912-11	s	CAP, ELECT 330 20% 50V
1-124-472-11	s	CAP, ELECT 470 20% 10V
1-124-475-11	s	CAP, ELECT 470 20% 16V
1-124-480-11	s	CAP, ELECT 470 20% 25V
1-126-104-11	s	CAP, ELECT 470 20% 35V
1-124-913-11	s	CAP, ELECT 470 20% 50V
1-124-921-11	s	CAP, ELECT 470 20% 63V
1-124-471-00	s	CAP, ELECT 1000 20% 6.3V
1-124-473-11	s	CAP, ELECT 1000 20% 10V
1-124-555-00	s	CAP, ELECT 1000 20% 16V
1-124-557-11	s	CAP, ELECT 1000 20% 25V
1-126-105-11	s	CAP, ELECT 1000 20% 35V
1-124-637-11	s	CAP, ELECT 1000 20% 50V
1-124-922-11	s	CAP, ELECT 1000 20% 63V
1-124-893-11	s	CAP, ELECT 2200 20% 10V
1-124-556-11	s	CAP, ELECT 2200 20% 16V
1-124-563-11	s	CAP, ELECT 2200 20% 25V
1-124-618-11	s	CAP, ELECT 2200 20% 35V
1-124-607-11	s	CAP, ELECT 2200 20% 50V
1-124-621-11	s	CAP, ELECT 3300 20% 6.3V
1-124-887-00	s	CAP, ELECT 3300 20% 16V
1-124-636-00	s	CAP, ELECT 3300 20% 25V
1-124-762-00	s	CAP, ELECT 4700 20% 10V
1-124-898-11	s	CAP, ELECT 4700 20% 16V
1-124-564-11	s	CAP, ELECT 4700 20% 25V
1-124-891-11	s	CAP, ELECT 10000 20% 6.3V
1-124-763-00	s	CAP, ELECT 10000 20% 10V

.CHIP, CERAMIC

Part No.	SP	Description
1-163-083-00	s	CAP, CHIP CERAMIC 1pF ±0.25pF 50V
1-163-085-00	s	CAP, CHIP CERAMIC 2pF ±0.25pF 50V
1-163-087-00	s	CAP, CHIP CERAMIC 4pF ±0.25pF 50V
1-163-089-00	s	CAP, CHIP CERAMIC 6pF ±0.5pF 50V
1-163-091-00	s	CAP, CHIP CERAMIC 8pF ±0.5pF 50V
1-163-093-00	s	CAP, CHIP CERAMIC 10pF 5% 50V
1-163-097-00	s	CAP, CHIP CERAMIC 15pF 5% 50V
1-163-101-00	s	CAP, CHIP CERAMIC 22pF 5% 50V
1-163-105-00	s	CAP, CHIP CERAMIC 33pF 5% 50V
1-163-109-00	s	CAP, CHIP CERAMIC 47pF 5% 50V
1-163-113-00	s	CAP, CHIP CERAMIC 68pF 5% 50V
1-163-117-00	s	CAP, CHIP CERAMIC 100pF 5% 50V
1-163-121-00	s	CAP, CHIP CERAMIC 150pF 5% 50V
1-163-125-00	s	CAP, CHIP CERAMIC 220pF 5% 50V
1-163-129-00	s	CAP, CHIP CERAMIC 330pF 5% 50V
1-163-133-00	s	CAP, CHIP CERAMIC 470pF 5% 50V
1-163-137-00	s	CAP, CHIP CERAMIC 680pF 5% 50V
1-163-141-00	s	CAP, CHIP CERAMIC 1000pF 5% 50V
1-163-145-00	s	CAP, CHIP CERAMIC 1500pF 10% 50V
1-163-013-00	s	CAP, CHIP CERAMIC 2200pF 10% 50V
1-163-015-00	s	CAP, CHIP CERAMIC 3300pF 10% 50V
1-163-017-00	s	CAP, CHIP CERAMIC 4700pF 10% 50V
1-163-019-00	s	CAP, CHIP CERAMIC 6800pF 10% 50V
1-163-021-00	s	CAP, CHIP CERAMIC 0.01 10% 50V
1-163-023-00	s	CAP, CHIP CERAMIC 0.015 10% 50V
1-163-034-00	s	CAP, CHIP CERAMIC 0.033 50V
1-163-035-00	s	CAP, CHIP CERAMIC 0.047 50V
1-163-036-00	s	CAP, CHIP CERAMIC 0.068 50V
1-163-038-00	s	CAP, CHIP CERAMIC 0.1 50V

INDUCTOR

.MICRO

Part No.	SP	Description
1-408-397-00	s	INDUCTOR, MICRO 1.0 5%
1-408-399-00	s	INDUCTOR, MICRO 1.5 5%
1-408-400-00	s	INDUCTOR, MICRO 1.8 5%
1-408-401-00	s	INDUCTOR, MICRO 2.2 5%
1-408-403-00	s	INDUCTOR, MICRO 3.3 5%
1-408-404-00	s	INDUCTOR, MICRO 3.9 5%
1-408-405-00	s	INDUCTOR, MICRO 4.7 5%
1-408-406-00	s	INDUCTOR, MICRO 5.6 5%
1-408-407-00	s	INDUCTOR, MICRO 6.8 5%
1-408-408-00	s	INDUCTOR, MICRO 8.2 5%
1-408-409-00	s	INDUCTOR, MICRO 10 5%
1-408-410-00	s	INDUCTOR, MICRO 12 5%
1-408-411-00	s	INDUCTOR, MICRO 15 5%
1-408-412-00	s	INDUCTOR, MICRO 18 5%
1-408-413-00	s	INDUCTOR, MICRO 22 5%
1-408-414-00	s	INDUCTOR, MICRO 27 5%
1-408-415-00	s	INDUCTOR, MICRO 33 5%
1-408-416-00	s	INDUCTOR, MICRO 39 5%
1-408-417-00	s	INDUCTOR, MICRO 47 5%
1-408-418-00	s	INDUCTOR, MICRO 56 5%
1-408-419-00	s	INDUCTOR, MICRO 68 5%
1-408-420-00	s	INDUCTOR, MICRO 82 5%
1-408-421-00	s	INDUCTOR, MICRO 100 5%
1-408-422-00	s	INDUCTOR, MICRO 120 5%
1-408-423-00	s	INDUCTOR, MICRO 150 5%
1-408-424-00	s	INDUCTOR, MICRO 180 5%
1-408-425-00	s	INDUCTOR, MICRO 220 5%
1-408-426-00	s	INDUCTOR, MICRO 270 5%
1-408-427-00	s	INDUCTOR, MICRO 330 5%
1-408-428-00	s	INDUCTOR, MICRO 390 5%
1-408-429-00	s	INDUCTOR, MICRO 470 5%
1-410-116-11	s	INDUCTOR, MICRO 560 5%
1-410-492-11	s	INDUCTOR, MICRO 680 5%
1-410-493-11	s	INDUCTOR, MICRO 820 5%
1-410-494-11	s	INDUCTOR, MICRO 1000 5%

RESISTOR

.CARBON

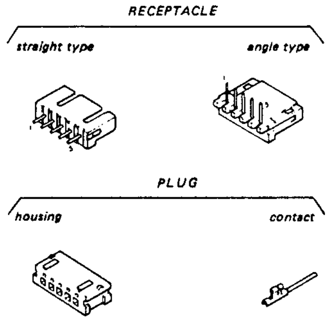
Part No.	SP	Description
1-249-381-11	s	RES, CARBON 1.0 5% 1/6W
1-249-382-11	s	RES, CARBON 1.2 5% 1/6W
1-249-383-11	s	RES, CARBON 1.5 5% 1/6W
1-249-384-11	s	RES, CARBON 1.8 5% 1/6W
1-249-385-11	s	RES, CARBON 2.2 5% 1/6W
1-249-386-11	s	RES, CARBON 2.7 5% 1/6W
1-249-387-11	s	RES, CARBON 3.3 5% 1/6W
1-249-388-11	s	RES, CARBON 3.9 5% 1/6W
1-249-389-11	s	RES, CARBON 4.7 5% 1/6W
1-249-390-11	s	RES, CARBON 5.6 5% 1/6W
1-249-391-11	s	RES, CARBON 6.8 5% 1/6W
1-249-392-11	s	RES, CARBON 8.2 5% 1/6W
1-249-393-11	s	RES, CARBON 10 5% 1/6W
1-249-394-11	s	RES, CARBON 12 5% 1/6W
1-249-395-11	s	RES, CARBON 15 5% 1/6W
1-249-396-11	s	RES, CARBON 18 5% 1/6W
1-249-397-11	s	RES, CARBON 22 5% 1/6W
1-249-398-11	s	RES, CARBON 27 5% 1/6W
1-249-399-11	s	RES, CARBON 33 5% 1/6W
1-249-400-11	s	RES, CARBON 39 5% 1/6W
1-249-401-11	s	RES, CARBON 47 5% 1/6W
1-249-402-11	s	RES, CARBON 56 5% 1/6W
1-249-403-11	s	RES, CARBON 68 5% 1/6W
1-215-394-00	s	RES, METAL 75 1% 1/6W
1-249-404-11	s	RES, CARBON 82 5% 1/6W
1-249-405-11	s	RES, CARBON 100 5% 1/6W
1-249-406-11	s	RES, CARBON 120 5% 1/6W
1-249-407-11	s	RES, CARBON 150 5% 1/6W
1-249-408-11	s	RES, CARBON 180 5% 1/6W
1-249-409-11	s	RES, CARBON 220 5% 1/6W
1-249-410-11	s	RES, CARBON 270 5% 1/6W
1-249-411-11	s	RES, CARBON 330 5% 1/6W
1-249-412-11	s	RES, CARBON 390 5% 1/6W
1-249-413-11	s	RES, CARBON 470 5% 1/6W
1-249-414-11	s	RES, CARBON 560 5% 1/6W
1-249-415-11	s	RES, CARBON 680 5% 1/6W
1-249-416-11	s	RES, CARBON 820 5% 1/6W
1-249-417-11	s	RES, CARBON 1.0k 5% 1/6W
1-249-418-11	s	RES, CARBON 1.2k 5% 1/6W
1-249-419-11	s	RES, CARBON 1.5k 5% 1/6W
1-249-420-11	s	RES, CARBON 1.8k 5% 1/6W
1-249-421-11	s	RES, CARBON 2.2k 5% 1/6W
1-249-422-11	s	RES, CARBON 2.7k 5% 1/6W
1-249-423-11	s	RES, CARBON 3.3k 5% 1/6W
1-249-424-11	s	RES, CARBON 3.9k 5% 1/6W
1-249-425-11	s	RES, CARBON 4.7k 5% 1/6W
1-249-426-11	s	RES, CARBON 5.6k 5% 1/6W
1-249-427-11	s	RES, CARBON 6.8k 5% 1/6W
1-249-428-11	s	RES, CARBON 8.2k 5% 1/6W
1-249-429-11	s	RES, CARBON 10k 5% 1/6W
1-249-430-11	s	RES, CARBON 12k 5% 1/6W
1-249-431-11	s	RES, CARBON 15k 5% 1/6W
1-249-432-11	s	RES, CARBON 18k 5% 1/6W
1-249-433-11	s	RES, CARBON 22k 5% 1/6W
1-249-434-11	s	RES, CARBON 27k 5% 1/6W
1-249-435-11	s	RES, CARBON 33k 5% 1/6W
1-249-436-11	s	RES, CARBON 39k 5% 1/6W
1-249-437-11	s	RES, CARBON 47k 5% 1/6W
1-249-438-11	s	RES, CARBON 56k 5% 1/6W
1-249-439-11	s	RES, CARBON 68k 5% 1/6W
1-249-440-11	s	RES, CARBON 82k 5% 1/6W
1-249-441-11	s	RES, CARBON 100k 5% 1/6W
1-215-471-00	s	RES, METAL 120k 1% 1/6W
1-215-473-00	s	RES, METAL 150k 1% 1/6W
1-215-475-00	s	RES, METAL 180k 1% 1/6W
1-215-477-00	s	RES, METAL 220k 1% 1/6W
1-215-479-00	s	RES, METAL 270k 1% 1/6W
1-215-481-00	s	RES, METAL 330k 1% 1/6W
1-215-483-00	s	RES, METAL 390k 1% 1/6W
1-215-485-00	s	RES, METAL 470k 1% 1/6W
1-215-487-00	s	RES, METAL 560k 1% 1/6W
1-215-489-00	s	RES, METAL 680k 1% 1/6W
1-215-491-00	s	RES, METAL 820k 1% 1/6W
1-215-493-00	s	RES, METAL 1.0M 1% 1/6W

Part No.	SP	Description
.METAL		
1-215-373-31	s	RES, METAL 10 1% 1/6W
1-215-374-00	s	RES, METAL 11 1% 1/6W
1-215-375-00	s	RES, METAL 12 1% 1/6W
1-215-376-00	s	RES, METAL 13 1% 1/6W
1-215-377-00	s	RES, METAL 15 1% 1/6W
1-215-378-00	s	RES, METAL 16 1% 1/6W
1-215-379-00	s	RES, METAL 18 1% 1/6W
1-215-380-00	s	RES, METAL 20 1% 1/6W
1-215-381-00	s	RES, METAL 22 1% 1/6W
1-215-382-00	s	RES, METAL 24 1% 1/6W
1-215-383-00	s	RES, METAL 27 1% 1/6W
1-215-384-00	s	RES, METAL 30 1% 1/6W
1-215-385-00	s	RES, METAL 33 1% 1/6W
1-215-386-00	s	RES, METAL 36 1% 1/6W
1-215-387-00	s	RES, METAL 39 1% 1/6W
1-215-388-00	s	RES, METAL 43 1% 1/6W
1-215-389-00	s	RES, METAL 47 1% 1/6W
1-215-390-00	s	RES, METAL 51 1% 1/6W
1-215-391-00	s	RES, METAL 56 1% 1/6W
1-215-392-00	s	RES, METAL 62 1% 1/6W
1-215-393-00	s	RES, METAL 68 1% 1/6W
1-215-394-00	s	RES, METAL 75 1% 1/6W
1-215-395-00	s	RES, METAL 82 1% 1/6W
1-215-396-00	s	RES, METAL 91 1% 1/6W
1-215-397-00	s	RES, METAL 100 1% 1/6W
1-215-398-00	s	RES, METAL 110 1% 1/6W
1-215-399-00	s	RES, METAL 120 1% 1/6W
1-215-400-00	s	RES, METAL 130 1% 1/6W
1-215-401-00	s	RES, METAL 150 1% 1/6W
1-215-402-00	s	RES, METAL 160 1% 1/6W
1-215-403-00	s	RES, METAL 180 1% 1/6W
1-215-404-00	s	RES, METAL 200 1% 1/6W
1-215-405-00	s	RES, METAL 220 1% 1/6W
1-215-406-00	s	RES, METAL 240 1% 1/6W
1-215-407-00	s	RES, METAL 270 1% 1/6W
1-215-408-00	s	RES, METAL 300 1% 1/6W
1-215-409-00	s	RES, METAL 330 1% 1/6W
1-215-410-00	s	RES, METAL 360 1% 1/6W
1-215-411-00	s	RES, METAL 390 1% 1/6W
1-215-412-00	s	RES, METAL 430 1% 1/6W
1-215-413-00	s	RES, METAL 470 1% 1/6W
1-215-414-00	s	RES, METAL 510 1% 1/6W
1-215-415-00	s	RES, METAL 560 1% 1/6W
1-215-416-00	s	RES, METAL 620 1% 1/6W
1-215-417-00	s	RES, METAL 680 1% 1/6W
1-215-418-00	s	RES, METAL 750 1% 1/6W
1-215-419-00	s	RES, METAL 820 1% 1/6W
1-215-420-00	s	RES, METAL 910 1% 1/6W
1-215-421-00	s	RES, METAL 1.0k 1% 1/6W
1-215-422-00	s	RES, METAL 1.1k 1% 1/6W
1-215-423-00	s	RES, METAL 1.2k 1% 1/6W
1-215-424-00	s	RES, METAL 1.3k 1% 1/6W
1-215-425-00	s	RES, METAL 1.5k 1% 1/6W
1-215-426-00	s	RES, METAL 1.6k 1% 1/6W
1-215-427-00	s	RES, METAL 1.8k 1% 1/6W
1-215-428-00	s	RES, METAL 2.0k 1% 1/6W
1-215-429-00	s	RES, METAL 2.2k 1% 1/6W
1-215-430-00	s	RES, METAL 2.4k 1% 1/6W
1-215-431-00	s	RES, METAL 2.7k 1% 1/6W
1-215-432-00	s	RES, METAL 3.0k 1% 1/6W
1-215-433-00	s	RES, METAL 3.3k 1% 1/6W
1-215-434-00	s	RES, METAL 3.6k 1% 1/6W
1-215-435-00	s	RES, METAL 3.9k 1% 1/6W
1-215-436-00	s	RES, METAL 4.3k 1% 1/6W
1-215-437-00	s	RES, METAL 4.7k 1% 1/6W
1-215-438-00	s	RES, METAL 5.1k 1% 1/6W
1-215-439-00	s	RES, METAL 5.6k 1% 1/6W
1-215-440-00	s	RES, METAL 6.2k 1% 1/6W
1-215-441-00	s	RES, METAL 6.8k 1% 1/6W
1-215-442-00	s	RES, METAL 7.5k 1% 1/6W
1-215-443-00	s	RES, METAL 8.2k 1% 1/6W
1-215-444-00	s	RES, METAL 9.1k 1% 1/6W
1-215-445-00	s	RES, METAL 10k 1% 1/6W
1-215-446-00	s	RES, METAL 11k 1% 1/6W
1-215-447-00	s	RES, METAL 12k 1% 1/6W
1-215-448-00	s	RES, METAL 13k 1% 1/6W
1-215-449-00	s	RES, METAL 15k 1% 1/6W
1-215-450-00	s	RES, METAL 16k 1% 1/6W
1-215-451-00	s	RES, METAL 18k 1% 1/6W
1-215-452-00	s	RES, METAL 20k 1% 1/6W
1-215-453-00	s	RES, METAL 22k 1% 1/6W
1-215-454-00	s	RES, METAL 24k 1% 1/6W
1-215-455-00	s	RES, METAL 27k 1% 1/6W
1-215-456-00	s	RES, METAL 30k 1% 1/6W
1-215-457-00	s	RES, METAL 33k 1% 1/6W
1-215-458-00	s	RES, METAL 36k 1% 1/6W
1-215-459-00	s	RES, METAL 39k 1% 1/6W
1-215-460-00	s	RES, METAL 43k 1% 1/6W
1-215-461-00	s	RES, METAL 47k 1% 1/6W
1-215-462-00	s	RES, METAL 51k 1% 1/6W
1-215-463-00	s	RES, METAL 56k 1% 1/6W
1-215-464-00	s	RES, METAL 62k 1% 1/6W
1-215-465-00	s	RES, METAL 68k 1% 1/6W
1-215-466-00	s	RES, METAL 75k 1% 1/6W
1-215-467-00	s	RES, METAL 82k 1% 1/6W
1-215-468-00	s	RES, METAL 91k 1% 1/6W
1-215-469-00	s	RES, METAL 100k 1% 1/6W
1-215-470-00	s	RES, METAL 110k 1% 1/6W
1-215-471-00	s	RES, METAL 120k 1% 1/6W
1-215-472-00	s	RES, METAL 130k 1% 1/6W
1-215-473-00	s	RES, METAL 150k 1% 1/6W
1-215-474-00	s	RES, METAL 160k 1% 1/6W
1-215-475-00	s	RES, METAL 180k 1% 1/6W
1-215-476-00	s	RES, METAL 200k 1% 1/6W
1-215-477-00	s	RES, METAL 220k 1% 1/6W
1-215-478-00	s	RES, METAL 240k 1% 1/6W
1-215-479-00	s	RES, METAL 270k 1% 1/6W
1-215-480-00	s	RES, METAL 300k 1% 1/6W
1-215-481-00	s	RES, METAL 330k 1% 1/6W
1-215-482-00	s	RES, METAL 360k 1% 1/6W
1-215-483-00	s	RES, METAL 390k 1% 1/6W
1-215-484-00	s	RES, METAL 430k 1% 1/6W
1-215-485-00	s	RES, METAL 470k 1% 1/6W
1-215-486-00	s	RES, METAL 510k 1% 1/6W
1-215-487-00	s	RES, METAL 560k 1% 1/6W
1-215-488-00	s	RES, METAL 620k 1% 1/6W
1-215-489-00	s	RES, METAL 680k 1% 1/6W
1-215-490-00	s	RES, METAL 750k 1% 1/6W
1-215-491-00	s	RES, METAL 820k 1% 1/6W
1-215-492-00	s	RES, METAL 910k 1% 1/6W
1-215-493-00	s	RES, METAL 1.0M 1% 1/6W

Part No.	SP	Description
.CHIP		
1-216-295-00	s	RES, CHIP 0 5% 1/10W
1-216-298-00	s	RES, CHIP 2.2 5% 1/10W
1-216-302-00	s	RES, CHIP 2.7 5% 1/10W
1-216-304-00	s	RES, CHIP 3.3 5% 1/10W
1-216-306-00	s	RES, CHIP 3.9 5% 1/10W
1-216-308-00	s	RES, CHIP 4.7 5% 1/10W
1-216-309-00	s	RES, CHIP 5.6 5% 1/10W
1-216-311-00	s	RES, CHIP 6.8 5% 1/10W
1-216-313-00	s	RES, CHIP 8.2 5% 1/10W
1-216-001-00	s	RES, CHIP 10 5% 1/10W
1-216-003-00	s	RES, CHIP 12 5% 1/10W
1-216-005-00	s	RES, CHIP 15 5% 1/10W
1-216-007-00	s	RES, CHIP 18 5% 1/10W
1-216-009-00	s	RES, CHIP 22 5% 1/10W
1-216-011-00	s	RES, CHIP 27 5% 1/10W
1-216-013-00	s	RES, CHIP 33 5% 1/10W
1-216-015-00	s	RES, CHIP 39 5% 1/10W
1-216-017-00	s	RES, CHIP 47 5% 1/10W
1-216-019-00	s	RES, CHIP 56 5% 1/10W
1-216-021-00	s	RES, CHIP 68 5% 1/10W
1-216-023-00	s	RES, CHIP 82 5% 1/10W
1-216-025-00	s	RES, CHIP 100 5% 1/10W
1-216-027-00	s	RES, CHIP 120 5% 1/10W
1-216-029-00	s	RES, CHIP 150 5% 1/10W
1-216-031-00	s	RES, CHIP 180 5% 1/10W
1-216-033-00	s	RES, CHIP 220 5% 1/10W
1-216-035-00	s	RES, CHIP 270 5% 1/10W
1-216-037-00	s	RES, CHIP 330 5% 1/10W
1-216-039-00	s	RES, CHIP 390 5% 1/10W
1-216-041-00	s	RES, CHIP 470 5% 1/10W
1-216-043-00	s	RES, CHIP 560 5% 1/10W
1-216-045-00	s	RES, CHIP 680 5% 1/10W
1-216-047-00	s	RES, CHIP 820 5% 1/10W
1-216-049-00	s	RES, CHIP 1k 5% 1/10W
1-216-051-00	s	RES, CHIP 1.2k 5% 1/10W
1-216-053-00	s	RES, CHIP 1.5k 5% 1/10W
1-216-055-00	s	RES, CHIP 1.8k 5% 1/10W
1-216-057-00	s	RES, CHIP 2.2k 5% 1/10W
1-216-059-00	s	RES, CHIP 2.7k 5% 1/10W
1-216-061-00	s	RES, CHIP 3.3k 5% 1/10W
1-216-063-00	s	RES, CHIP 3.9k 5% 1/10W
1-216-065-00	s	RES, CHIP 4.7k 5% 1/10W
1-216-067-00	s	RES, CHIP 5.6k 5% 1/10W
1-216-069-00	s	RES, CHIP 6.8k 5% 1/10W
1-216-071-00	s	RES, CHIP 8.2k 5% 1/10W
1-216-073-00	s	RES, CHIP 10k 5% 1/10W
1-216-075-00	s	RES, CHIP 12k 5% 1/10W
1-216-077-00	s	RES, CHIP 15k 5% 1/10W
1-216-079-00	s	RES, CHIP 18k 5% 1/10W
1-216-081-00	s	RES, CHIP 22k 5% 1/10W
1-216-083-00	s	RES, CHIP 27k 5% 1/10W
1-216-085-00	s	RES, CHIP 33k 5% 1/10W
1-216-087-00	s	RES, CHIP 39k 5% 1/10W
1-216-089-00	s	RES, CHIP 47k 5% 1/10W
1-216-091-00	s	RES, CHIP 56k 5% 1/10W
1-216-093-00	s	RES, CHIP 68k 5% 1/10W
1-216-095-00	s	RES, CHIP 82k 5% 1/10W
1-216-097-00	s	RES, CHIP 100k 5% 1/10W
1-216-099-00	s	RES, CHIP 120k 5% 1/10W
1-216-101-00	s	RES, CHIP 150k 5% 1/10W
1-216-103-00	s	RES, CHIP 180k 5% 1/10W
1-216-105-00	s	RES, CHIP 220k 5% 1/10W
1-216-107-00	s	RES, CHIP 270k 5% 1/10W
1-216-109-00	s	RES, CHIP 330k 5% 1/10W
1-216-111-00	s	RES, CHIP 390k 5% 1/10W
1-216-113-00	s	RES, CHIP 470k 5% 1/10W
1-216-115-00	s	RES, CHIP 560k 5% 1/10W
1-216-117-00	s	RES, CHIP 680k 5% 1/10W
1-216-119-00	s	RES, CHIP 820k 5% 1/10W
1-216-121-00	s	RES, CHIP 1.0M 5% 1/10W
1-216-123-00	s	RES, CHIP 1.2M 5% 1/10W
1-216-125-00	s	RES, CHIP 1.5M 5% 1/10W
1-216-127-00	s	RES, CHIP 1.8M 5% 1/10W
1-216-129-00	s	RES, CHIP 2.2M 5% 1/10W
1-216-131-00	s	RES, CHIP 2.7M 5% 1/10W
1-216-133-00	s	RES, CHIP 3.3M 5% 1/10W

CONNECTOR

Part No.	SP	Description
1-564-001-11	o	RECEPTACLE 2P MALE (STRAIGHT TYPE)
1-564-012-11	o	RECEPTACLE 2P MALE (ANGLE TYPE)
1-562-147-11	o	HOUSING 2P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-002-11	o	RECEPTACLE 3P MALE (STRAIGHT TYPE)
1-564-013-11	o	RECEPTACLE 3P MALE (ANGLE TYPE)
1-562-148-11	o	HOUSING 3P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-003-11	o	RECEPTACLE 4P MALE (STRAIGHT TYPE)
1-564-014-11	o	RECEPTACLE 4P MALE (ANGLE TYPE)
1-562-149-11	o	HOUSING 4P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-004-11	o	RECEPTACLE 5P MALE (STRAIGHT TYPE)
1-564-015-11	o	RECEPTACLE 5P MALE (ANGLE TYPE)
1-562-150-11	o	HOUSING 5P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-005-11	o	RECEPTACLE 6P MALE (STRAIGHT TYPE)
1-564-016-11	o	RECEPTACLE 6P MALE (ANGLE TYPE)
1-562-151-11	o	HOUSING 6P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-006-11	o	RECEPTACLE 7P MALE (STRAIGHT TYPE)
1-564-017-11	o	RECEPTACLE 7P MALE (ANGLE TYPE)
1-562-152-11	o	HOUSING 7P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-007-11	o	RECEPTACLE 8P MALE (STRAIGHT TYPE)
1-564-018-11	o	RECEPTACLE 8P MALE (ANGLE TYPE)
1-562-153-11	o	HOUSING 8P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-008-41	o	RECEPTACLE 9P MALE (STRAIGHT TYPE)
1-564-019-11	o	RECEPTACLE 9P MALE (ANGLE TYPE)
1-562-154-11	o	HOUSING 9P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-009-11	o	RECEPTACLE 10P MALE (STRAIGHT TYPE)
1-564-020-11	o	RECEPTACLE 10P MALE (ANGLE TYPE)
1-562-155-11	o	HOUSING 10P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-010-21	o	RECEPTACLE 11P MALE (STRAIGHT TYPE)
1-564-021-11	o	RECEPTACLE 11P MALE (ANGLE TYPE)
1-562-156-11	o	HOUSING 11P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-011-11	o	RECEPTACLE 12P MALE (STRAIGHT TYPE)
1-564-022-11	o	RECEPTACLE 12P MALE (ANGLE TYPE)
1-562-157-11	o	HOUSING 12P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-683-11	o	RECEPTACLE 13P MALE (STRAIGHT TYPE)
1-564-743-11	o	RECEPTACLE 13P MALE (ANGLE TYPE)
1-562-627-11	o	HOUSING 13P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-069-11	o	RECEPTACLE 14P MALE (STRAIGHT TYPE)
1-564-630-11	o	RECEPTACLE 14P MALE (ANGLE TYPE)
1-562-185-11	o	HOUSING 14P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32
1-564-855-11	o	RECEPTACLE 15P MALE (STRAIGHT TYPE)
1-564-877-11	o	RECEPTACLE 15P MALE (ANGLE TYPE)
1-562-958-11	o	HOUSING 15P
1-564-026-21	o	CONTACT AWG24-30
1-564-681-21	o	CONTACT AWG32



AC-65 BOARD (FOR UC)

Ref No.	Parts No.	SP	Description
	1-618-591-11	o	PRINTED CIRCUIT BOARD, AC-65
	1-533-189-11	o	HOLDER, FUSE
⚠CN1	1-506-371-00	o	2P PLUG (L)
⚠F1	1-532-743-11	s	FUSE, GLASS TUBE 2.0A 125V

AC-89 BOARD (FOR EK)

Ref No.	Parts No.	SP	Description
	1-622-786-11	o	PRINTED CIRCUIT BOARD, AC-89
	1-533-189-11	o	HOLDER, FUSE
⚠C1	1-136-211-00	s	FILM 0.022 20% 250V
C2	1-130-711-00	s	FILM 0.22 20% 250V
⚠CN1	1-506-371-00	o	2P PLUG (L)
⚠F1	1-532-203-00	s	FUSE, TIME-LAG 2.0A 250V
⚠L1	1-421-556-21	s	LINE FILTER
⚠R1	1-214-937-00	s	CARBON 1M 5% 1/2W

AU-82B BOARD

Ref No.	Parts No.	SP	Description
	A-6713-316-A	o	MOUNTED CIRCUIT BOARD, AU-82B
C5	1-124-499-11	s	ELECT 1 20% 50V
C8	1-124-499-11	s	ELECT 1 20% 50V
C13	1-124-925-11	s	ELECT 2.2 20% 100V
C14	1-162-199-31	s	CERAMIC 10PF 5% 50V
C19	1-124-499-11	s	ELECT 1 20% 50V
C21	1-130-471-00	s	MYLAR 0.001 5% 50V
C22	1-124-925-11	s	ELECT 2.2 20% 100V
C54	1-124-499-11	s	ELECT 1 20% 50V
C101	1-123-332-00	s	ELECT 47 20% 16V
C102	1-162-286-31	s	CERAMIC 220PF 10% 50V
C151	1-109-621-00	s	MICA 220PF 5% 500V
C152	1-162-290-31	s	CERAMIC 470PF 10% 50V
C156	1-124-925-11	s	ELECT 2.2 20% 100V
C158	1-131-343-00	s	TANTAL 0.22 10% 35V
C159	1-131-347-00	s	TANTAL 1 20% 35V
C162	1-162-219-31	s	CERAMIC 68PF 5% 50V
C203	1-124-925-11	s	ELECT 2.2 20% 100V
C211	1-124-925-11	s	ELECT 2.2 20% 100V
C212	1-162-199-31	s	CERAMIC 10PF 5% 50V
C217	1-124-499-11	s	ELECT 1 20% 50V
C254	1-124-499-11	s	ELECT 1 20% 50V
C301	1-123-332-00	s	ELECT 47 20% 16V
C304	1-162-286-31	s	CERAMIC 220PF 10% 50V
C351	1-109-621-00	s	MICA 220PF 5% 500V
C352	1-162-290-31	s	CERAMIC 470PF 10% 50V
C356	1-124-925-11	s	ELECT 2.2 20% 100V
C358	1-131-347-00	s	TANTAL 1 20% 35V
C361	1-162-219-31	s	CERAMIC 68PF 5% 50V
C362	1-131-343-00	s	TANTAL 0.22 10% 35V
C605	1-109-627-00	s	MICA 150PF 5% 500V
C606	1-109-627-00	s	MICA 150PF 5% 500V
C611	1-109-568-11		MICA 300PF 5% 500V
C612	1-109-576-00	s	MICA 620PF 5% 500V
C615	1-129-928-00	s	FILM 0.0027 10% 630V
CP601	1-464-805-11	s	OSCILLATION UNIT, BIAS
D1	8-719-911-19	s	1SS119
D2	8-719-911-19	s	1SS119
D3	8-719-911-19	s	1SS119
D4	8-719-911-19	s	1SS119
D5	8-719-911-19	s	1SS119
D7	8-719-109-91	s	RD6.2ES-B
D8	8-719-109-91	s	RD6.2ES-B
D9	8-719-911-19	s	1SS119
D10	8-719-911-19	s	1SS119
D51	8-719-911-19	s	1SS119
D53	8-719-911-19	s	1SS119
D101	8-719-911-19	s	1SS119
D102	8-719-911-19	s	1SS119
D103	8-719-911-19	s	1SS119
D104	8-719-109-91	s	RD6.2ES-B
D151	8-719-109-91	s	RD6.2ES-B
D201	8-719-911-19	s	1SS119
D202	8-719-911-19	s	1SS119
D204	8-719-109-01	s	RD6.2ES-B
D205	8-719-911-19	s	1SS119
D206	8-719-911-19	s	1SS119
D251	8-719-911-19	s	1SS119
D301	8-719-911-19	s	1SS119
D302	8-719-911-19	s	1SS119
D303	8-719-911-19	s	1SS119
D351	8-719-109-91	s	RD6.2ES-B
D401	8-719-109-91	s	RD6.2ES-B
D451	8-719-109-91	s	RD6.2ES-B
D452	8-719-911-19	s	1SS119
D501	8-719-109-91	s	RD6.2ES-B
D502	8-719-911-19	s	1SS119
D503	8-719-200-77	s	10E2N
D504	8-719-911-19	s	1SS119
D505	8-719-911-19	s	1SS119
D506	8-719-911-19	s	1SS119

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Ref No.	Parts No.	SP	Description
D507	8-719-100-01	s	RD2.0E-B
D601	8-719-109-64	s	RD3.3ES-B
D602	8-719-200-77	s	10E2N
D603	8-719-200-77	s	10E2N
IC1	8-759-705-62	s	NJM4562D-D (JRC)
IC2	8-759-208-10	s	TC4053BPHB (TOSHIBA)
IC3	8-759-705-62	s	NJM4562D-D (JRC)
IC51	8-759-802-46	s	LA4550 (SANYO)
IC101	8-759-700-04	s	NJM2043D-D (JRC)
IC102	8-759-705-62	s	NJM4562D-D (JRC)
IC151	8-759-705-58	s	NJM4558D-D (JRC)
IC202	8-759-208-10	s	TC4053BPHB (JRC)
IC351	8-759-705-58	s	NJM4558D-D (JRC)
IC401	8-759-240-11	s	TC4011BP (TOSHIBA)
L1	1-407-519-00	s	8uH
L201	1-407-519-00	s	8uH
LV101	1-459-434-00	s	VAR 22mH
LV151	1-459-434-00	s	VAR 22mH
LV152	1-459-434-00	s	VAR 22mH
LV301	1-459-434-00	s	VAR 22mH
LV302	1-459-434-00	s	VAR 22mH
LV351	1-459-434-00	s	VAR 22mH
LV352	1-459-434-00	s	VAR 22mH
LV601	1-407-283-00	s	VAR 0.68mH
LV602	1-410-859-11	s	VAR 240uH
Q1	8-729-178-55	s	2SC2785-E
Q2	8-729-115-10	s	2SK105A-10
Q3	8-729-178-55	s	2SC2785-E
Q4	8-729-178-55	s	2SC2785-E
Q5	8-729-178-55	s	2SC2785-E
Q6	8-729-178-55	s	2SC2785-E
Q7	8-729-201-05	s	2SC2878-B
Q8	8-729-178-55	s	2SC2785-E
Q51	8-729-201-05	s	2SC2878-B
Q52	8-729-178-55	s	2SC2785-E
Q53	8-729-178-55	s	2SC2785-E
Q54	8-729-201-05	s	2SC2878-B
Q55	8-729-201-05	s	2SC2878-B
Q101	8-729-178-55	s	2SC2785-E
Q102	8-729-178-55	s	2SC2785-E
Q103	8-729-117-54	s	2SA1175-K
Q105	8-729-201-05	s	2SC2878-B
Q106	8-729-201-05	s	2SC2878-B
Q151	8-729-201-05	s	2SC2878-B
Q152	8-729-178-55	s	2SC2785-E
Q154	8-729-201-05	s	2SC2878-B
Q201	8-729-178-55	s	2SC2785-E
Q202	8-729-178-55	s	2SC2785-E
Q203	8-729-178-55	s	2SC2785-E
Q204	8-729-178-55	s	2SC2785-E

Ref No.	Parts No.	SP	Description
Q206	8-729-201-05	s	2SC2878-B
Q207	8-729-178-55	s	2SC2785-E
Q208	8-729-178-55	s	2SC2785-E
Q251	8-729-201-05	s	2SC2878-B
Q252	8-729-178-55	s	2SC2785-E
Q301	8-729-178-55	s	2SC2785-E
Q302	8-729-178-55	s	2SC2785-E
Q303	8-729-117-54	s	2SA1175-K
Q304	8-729-201-05	s	2SC2878-B
Q305	8-729-178-55	s	2SC2785-E
Q306	8-729-201-05	s	2SC2878-B
Q351	8-729-201-05	s	2SC2878-B
Q354	8-729-201-05	s	2SC2878-B
Q401	8-729-178-55	s	2SC2785-E
Q402	8-729-117-54	s	2SA1175-K
Q403	8-729-117-54	s	2SA1175-K
Q451	8-729-178-55	s	2SC2785-E
Q452	8-729-117-54	s	2SA1175-K
Q453	8-729-117-54	s	2SA1175-K
Q501	8-729-178-55	s	2SC2785-E
Q502	8-729-113-33	s	2SB733-4
Q503	8-729-117-56	s	2SA1175-K
Q601	8-729-201-05	s	2SC2878-B
Q602	8-729-117-54	s	2SA1175-K
Q603	8-729-177-33	s	2SD773-4
Q606	8-729-201-05	s	2SC2878-B
Q607	8-729-117-54	s	2SA1175-K
Q608	8-729-177-33	s	2SD773-4
R8	1-247-883-00	s	CARBON 150k 5% 1/4W
R19	1-247-887-00	s	CARBON 220k 5% 1/4W
R27	1-247-885-00	o	CARBON 180k 5% 1/4W
R40	1-247-891-00	s	CARBON 330k 5% 1/4W
R177	1-247-887-00	s	CARBON 220k 5% 1/4W
R124	1-247-881-00	s	CARBON 120k 5% 1/4W
R126	1-247-881-00	s	CARBON 120k 5% 1/4W
R159	1-247-883-00	s	CARBON 150k 5% 1/4W
R204	1-247-891-00	s	CARBON 330k 5% 1/4W
R216	1-247-887-00	s	CARBON 220k 5% 1/4W
R224	1-247-885-00	o	CARBON 180k 5% 1/4W
R236	1-247-883-00	s	CARBON 150k 5% 1/4W
R304	1-247-849-00	s	CARBON 5.6k 5% 1/4W
R321	1-247-887-00	s	CARBON 220k 5% 1/4W
R327	1-247-881-00	s	CARBON 120k 5% 1/4W
R329	1-247-881-00	s	CARBON 120k 5% 1/4W
R507	1-247-885-00	s	CARBON 180k 5% 1/4W
RV1	1-228-996-00	s	VAR, CARBON 47k
RV51	1-228-990-00	s	VAR, CARBON 1k
RV101	1-228-994-00	s	VAR, CARBON 10k
RV102	1-228-994-00	s	VAR, CARBON 10k
RV103	1-228-993-00	s	VAR, CARBON 4.7k
RV151	1-228-993-00	s	VAR, CARBON 4.7k
RV152	1-228-993-00	s	VAR, CARBON 4.7k
RV201	1-228-996-00	s	VAR, CARBON 47k
RV251	1-228-990-00	s	VAR, CARBON 1k
RV301	1-228-994-00	s	VAR, CARBON 10k

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Ref No.	Parts No.	SP	Description
RV302	1-228-994-00	s	VAR, CARBON 10k
RV303	1-228-994-00	s	VAR, CARBON 10k
RV304	1-228-993-00	s	VAR, CARBON 4.7k
RV351	1-228-993-00	s	VAR, CARBON 4.7k
RV352	1-228-993-00	s	VAR, CARBON 4.7k
RV601	1-228-998-00	s	VAR, CARBON 220k
RV602	1-228-998-00	s	VAR, CARBON 220k
RV604	1-228-994-00	s	VAR, CARBON 10k
RY601	1-515-614-11	s	RELAY 12V 16.6A

CC-31 BOARD

	1-622-255-11	o	PRINTED CIRCUIT BOARD, CC-31

CC-32 BOARD

	1-622-256-11	o	PRINTED CIRCUIT BOARD, CC-32
IC1	8-719-940-86	s	GP1L53 "CASSETTE IN DET"

CC-33 BOARD

	1-622-257-11	o	PRINTED CIRCUIT BOARD, CC-33
IC1	8-719-940-86	s	GP1L53 "CASSETTE DOWN DET"

CO-12 BOARD

Ref No.	Parts No.	SP	Description
	A-6711-921-A	o	MOUNTED CIRCUIT BOARD, CO-12
C13	1-124-236-00	s	ELECT 47 20% 16V
C15	1-124-462-00	s	ELECT 10 20% 16V
C16	1-124-462-00	s	ELECT 10 20% 16V
C21	1-124-236-00	s	ELECT 47 20% 16V
C22	1-124-462-00	s	ELECT 10 20% 16V
C23	1-124-462-00	s	ELECT 10 20% 16V
C27	1-124-462-00	s	ELECT 10 20% 16V
C29	1-124-236-00	s	ELECT 47 20% 16V
C30	1-124-234-00	s	ELECT 22 20% 16V
C33	1-124-234-00	s	ELECT 22 20% 16V
C34	1-124-462-00	s	ELECT 10 20% 16V
C36	1-124-236-00	s	ELECT 47 20% 16V
C37	1-124-234-00	s	ELECT 22 20% 16V
C38	1-124-234-00	s	ELECT 22 20% 16V
C39	1-131-350-00	s	TANTAL 3.3 10% 35V
C40	1-131-350-00	s	TANTAL 3.3 10% 35V
C42	1-131-361-00	s	TANTAL 2.2 10% 16V
C46	1-124-236-00	s	ELECT 47 20% 16V
C49	1-123-611-00	s	ELECT 1 20% 50V
C50	1-124-257-00	s	ELECT 2.2 20% 50V
C53	1-124-236-00	s	ELECT 47 20% 16V
C54	1-124-462-00	s	ELECT 10 20% 16V
C57	1-131-344-00	s	TANTAL 0.33 10% 35V
C61	1-124-236-00	s	ELECT 47 20% 16V
C62	1-163-033-00	s	CERAMIC CHIP 0.022 10% 25V
C63	1-131-344-00	s	TANTAL 0.33 10% 35V
C65	1-131-363-00	s	TANTAL 4.7 10% 16V
C72	1-124-236-00	s	ELECT 47 20% 16V
C75	1-124-236-00	s	ELECT 47 20% 16V
C76	1-131-343-00	s	TANTAL 0.22 10% 35V
C88	1-101-888-00	s	CERAMIC 68 5% 50V
C91	1-124-236-00	s	ELECT 47 20% 16V
C92	1-124-462-00	s	ELECT 10 20% 16V
C93	1-124-462-00	s	ELECT 10 20% 16V
C95	1-124-462-00	s	ELECT 10 20% 16V
C99	1-124-236-00	s	ELECT 47 20% 16V
C100	1-123-611-00	s	ELECT 1 20% 50V
C201	1-124-462-00	s	ELECT 10 20% 16V
C207	1-124-236-00	s	ELECT 47 20% 16V
C210	1-123-611-00	s	ELECT 1 20% 50V
C211	1-124-462-00	s	ELECT 10 20% 16V
C307	1-124-236-00	s	ELECT 47 20% 16V
C316	1-124-236-00	s	ELECT 47 20% 16V
C324	1-124-462-00	s	ELECT 10 20% 16V
C325	1-163-033-00	s	CERAMIC CHIP 0.022 10% 25V
C326	1-124-462-00	s	ELECT 10 20% 16V
C327	1-124-236-00	s	ELECT 47 20% 16V
C328	1-124-236-00	s	ELECT 47 20% 16V
C329	1-124-236-00	s	ELECT 47 20% 16V
C332	1-123-611-00	s	ELECT 1 20% 50V
C333	1-123-611-00	s	ELECT 1 20% 50V
C337	1-124-462-00	s	ELECT 10 20% 16V
C338	1-163-033-00	s	CERAMIC CHIP 0.022 10% 25V
C339	1-124-462-00	s	ELECT 10 20% 16V
C340	1-124-462-00	s	ELECT 10 20% 16V
C341	1-124-462-00	s	ELECT 10 20% 16V
C343	1-124-236-00	s	ELECT 47 20% 16V
C344	1-124-236-00	s	ELECT 47 20% 16V
C348	1-124-236-00	s	ELECT 47 20% 16V
C350	1-124-462-00	s	ELECT 10 20% 16V
CV1	1-141-227-00	s	TRIMMER

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
D1	8-719-100-05	s	1S2837
D2	8-719-100-03	s	1S2835
D3	8-719-815-59	s	1S1555-S
D4	8-719-815-59	s	1S1555-S
D5	8-719-100-05	s	1S2837
D7	8-719-100-05	s	1S2837
D17	8-719-911-19	s	1SS119
DL1	1-415-096-31	s	DELAY LINE
DL2	1-415-096-31	s	DELAY LINE
DL301	1-235-392-11	s	DELAY LINE
DL302	1-235-392-11	s	DELAY LINE
DL304	1-235-392-11	s	DELAY LINE
FL1	1-231-295-31	s	BAND PASS
FL2	1-231-578-21	s	LOW PASS
FL301	1-235-450-11	s	LOW PASS
IC1	8-759-240-53	s	TC4053BP (TOSHIBA)
IC2	8-751-880-00	s	CX-188 (SONY)
IC3	8-759-908-59	s	CX-859 (SONY)
IC4	8-759-245-28	s	TC4528BP (TOSHIBA)
IC302	8-752-201-30	s	CX22013 (SONY)
IC303	8-752-030-30	s	CXA1020P (SONY)
L3	1-410-473-11	s	18
L4	1-410-476-11	s	33
L6	1-410-482-31	s	100
L10	1-410-482-31	s	100
L11	1-410-482-31	s	100
L12	1-410-482-31	s	100
L13	1-410-482-31	s	100
L15	1-410-482-31	s	100
L17	1-410-482-31	s	100
L19	1-410-482-31	s	100
L20	1-410-092-31	s	27mmH
L21	1-410-470-11	s	10
L22	1-410-482-31	s	100
L23	1-410-482-31	s	100
L201	1-410-482-31	s	100
L303	1-410-476-11	s	33
L304	1-410-471-11	s	12
L305	1-410-476-11	s	33
L306	1-410-471-11	s	12
L307	1-410-482-31	s	100
L309	1-410-482-31	s	100

Ref No.	Parts No.	SP	Description
Q3	8-729-271-22	s	2SC2712G
Q4	8-729-271-22	s	2SC2712G
Q5	8-729-271-22	s	2SC2712G
Q6	8-729-202-39	s	2SC3326N-B
Q7	8-729-271-22	s	2SC2712G
Q8	8-729-271-22	s	2SC2712G
Q9	8-729-271-22	s	2SC2712G
Q10	8-729-271-22	s	2SC2712G
Q11	8-729-271-22	s	2SC2712G
Q12	8-729-271-22	s	2SC2712G
Q13	8-729-271-22	s	2SC2712G
Q14	8-729-202-39	s	2SC3326N-B
Q15	8-729-271-22	s	2SC2712G
Q16	8-729-202-39	s	2SC3326N-B
Q17	8-729-271-22	s	2SC2712G
Q18	8-729-202-39	s	2SC3326N-B
Q19	8-729-271-22	s	2SC2712G
Q20	8-729-202-39	s	2SC3326N-B
Q21	8-729-202-39	s	2SC3326N-B
Q22	8-729-216-21	s	2SA1162-Y
Q23	8-729-271-22	s	2SC2712G
Q24	8-729-271-22	s	2SC2712G
Q25	8-729-202-39	s	2SC3326N-B
Q26	8-729-901-01	s	DTC144EK
Q27	8-729-202-38	s	2SC3326N-B
Q28	8-729-216-21	s	2SA1162-Y
Q29	8-729-271-22	s	2SC2712G
Q30	8-729-202-39	s	2SC3326N-B
Q31	8-729-271-22	s	2SC2712G
Q32	8-729-202-39	s	2SC3326N-B
Q33	8-729-901-01	s	DTC144EK
Q201	8-729-271-22	s	2SC2712G
Q202	8-729-271-22	s	2SC2712G
Q203	8-729-271-22	s	2SC2712G
Q205	8-729-202-39	s	2SC3326N-B
Q207	8-729-271-22	s	2SC2712G
Q208	8-729-271-22	s	2SC2712G
Q209	8-729-271-22	s	2SC2712G
Q210	8-729-271-22	s	2SC2712G
Q301	8-729-271-22	s	2SC2712G
Q302	8-729-271-22	s	2SC2712G
Q303	8-729-271-22	s	2SC2712G
Q304	8-729-271-22	s	2SC2712G
Q305	8-729-216-21	s	2SA1162-Y
Q306	8-729-271-22	s	2SC2712G
Q307	8-729-271-22	s	2SC2712G
Q308	8-729-216-21	s	2SA1162-Y
Q309	8-729-271-22	s	2SC2712G
Q310	8-729-271-22	s	2SC2712G
Q311	8-729-271-22	s	2SC2712G
Q312	8-729-271-22	s	2SC2712G
Q315	8-729-271-22	s	2SC2712G
Q316	8-729-271-22	s	2SC2712G
Q317	8-729-271-22	s	2SC2712G
Q318	8-729-271-22	s	2SC2712G
Q319	8-729-271-22	s	2SC2712G
Q320	8-729-271-22	s	2SC2712G
Q321	8-729-901-01	s	DTC144EK
C322	8-729-271-22	s	2SC2712G

Parts that are not listed in the "reference number order list"
are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
Q326	8-729-271-22	s	2SC2712G
Q327	8-729-271-22	s	2SC2712G
Q328	8-729-271-22	s	2SC2712G
Q329	8-729-271-22	s	2SC2712G
Q330	8-729-271-22	s	2SC2712G
Q331	8-729-271-22	s	2SC2712G
R12	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R13	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R14	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R19	1-216-653-11	s	METAL CHIP 1.2k 0.5% 1/10W
R20	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R21	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R22	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R27	1-216-640-11	s	MATAL CHIP 360 0.5% 1/10W
R28	1-216-649-11	s	MATAL CHIP 820 0.5% 1/10W
R36	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R37	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R39	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R40	1-216-649-11	s	METAL CHIP 820 0.5% 1/10W
R41	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R47	1-216-670-11	s	METAL CHIP 6.2k 0.5% 1/10W
R49	1-216-682-11	s	METAL CHIP 20k 0.5% 1/10W
R71	1-216-675-11	s	METAL CHIP 10k 0.5% 1/10W
R93	1-216-663-11	s	METAL CHIP 3.3k 0.5% 1/10W
R112	1-216-064-00	s	METAL CHIP 4.3k 5% 1/10W
R128	1-216-044-00	s	METAL CHIP 620 5% 1/10W
R203	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R204	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R205	1-216-642-11	s	METAL CHIP 430 0.5% 1/10W
R206	1-216-656-11	s	METAL CHIP 1.6k 0.5% 1/10W
R214	1-216-636-11	s	METAL CHIP 240 0.5% 1/10W
R217	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R218	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R219	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R220	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R221	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R222	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R223	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R225	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R227	1-216-642-11	s	METAL CHIP 430 0.5% 1/10W
R233	1-216-658-11	s	METAL CHIP 2k 0.5% 1/10W
R304	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R305	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R308	1-216-644-11	s	METAL CHIP 510 0.5% 1/10W
R309	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R310	1-216-648-11	s	METAL CHIP 750 0.5% 1/10W
R311	1-216-644-11	s	METAL CHIP 510 0.5% 1/10W
R312	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R313	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R314	1-216-644-11	s	METAL CHIP 510 0.5% 1/10W
R315	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R320	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R321	1-216-645-11	s	METAL CHIP 560 0.5% 1/10W
R322	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R323	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R324	1-216-645-11	s	METAL CHIP 560 0.5% 1/10W
R325	1-216-643-11	s	METAL CHIP 470 0.5% 1/10W
R339	1-216-647-11	s	METAL CHIP 680 0.5% 1/10W
R346	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R347	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R350	1-216-652-11	s	METAL CHIP 1.1k 0.5% 1/10W
R359	1-216-620-11	s	METAL CHIP 51 0.5% 1/10W
R363	1-216-650-11	s	METAL CHIP 910 0.5% 1/10W
R364	1-216-653-11	s	METAL CHIP 1.2k 0.5% 1/10W
R365	1-216-661-11	s	METAL CHIP 2.7k 0.5% 1/10W
R372	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R373	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R375	1-216-654-11	s	METAL CHIP 1.3k 0.5% 1/10W
R376	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R377	1-216-651-11	s	METAL CHIP 1k 0.5% 1/10W
R392	1-216-635-11	s	METAL CHIP 220 0.5% 1/10W
RV2	1-228-995-00	s	VAR CARBON 22k
RV4	1-228-993-00	s	VAR CARBON 4.7k
RV5	1-228-989-00	s	VAR CARBON 470
RV6	1-228-993-00	s	VAR CARBON 4.7k
RV7	1-228-993-00	s	VAR CARBON 4.7k
RV8	1-228-995-00	s	VAR CARBON 22k
RV9	1-228-995-00	s	VAR CARBON 22k
RV10	1-228-996-00	s	VAR CARBON 47k
RV201	1-228-991-00	s	VAR CARBON 2.2k
RV301	1-228-991-00	s	VAR CARBON 2.2k
RV302	1-228-991-00	s	VAR CARBON 2.2k
RV303	1-228-990-00	s	VAR CARBON 1k
T1	1-426-184-11	s	BURST AMP
T2	1-426-188-11	s	BPT
T3	1-426-190-11	s	BPT
T301	1-425-879-00	s	BAND PASS
X1	1-567-860-11	s	CRYSTAL

CP-128 BOARD

	A-6713-317-A	o	MOUNTED CIRCUIT BOARD, CP-128
C4	1-131-361-00	s	TANTAL 2.2 10% 16V
C5	1-162-199-31	s	CERAMIC 10PF 5% 50V
C6	1-136-153-00	s	MYLAR 0.01 10% 50V
C8	1-162-282-31	s	CERAMIC 10000PF 30% 16V
C9	1-162-282-31	s	CERAMIC 10000PF 30% 16V
C11	1-162-282-31	s	CERAMIC 10000PF 30% 16V
C12	1-162-282-31	s	CERAMIC 10000PF 30% 16V
C13	1-126-101-11	s	CERAMIC 100 20% 16V
C104	1-131-361-00	s	TANTAL 2.2 10% 16V
C105	1-162-199-31	s	CERAMIC 10PF 5% 50V
C108	1-162-282-31	s	CERAMIC 10000PF 30% 16V
C111	1-162-282-31	s	CERAMIC 10000PF 30% 16V

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
CP1	1-236-010-11	s	FILTER, LOW PASS
CP1	1-236-010-11	s	FILTER, LOW PASS
D1	8-719-911-19	s	1SS119
D2	8-719-109-91	s	RD6.2ESB
D101	8-719-911-19	s	1SS119
IC1	8-759-705-58	s	NJM4558D-D (JRC)
Q1	8-729-178-54	s	2SC2878-E
Q101	8-729-178-54	s	2SC2878-E
R7	1-247-883-00	s	CARBON 150k 5% 1/4W
R107	1-247-883-00	s	CARBON 150k 5% 1/4W

DC-31A BOARD (FOR EK)

Ref No.	Parts No.	SP	Description
	1-622-221-21	o	PRINTED CIRCUIT BOARD, DC-31A
	1-533-189-11	o	HOLDER, FUSE
	1-561-432-00	o	CONNECTOR CONTACT
	1-561-424-00	o	SOCKET, CONNECTOR 5P
C2	1-161-379-00	s	CERAMIC 0.01 20% 16V
CN005	1-562-738-11	o	HOUSING, CONNECTOR 5P
⚠ F1	1-532-237-00	s	FUSE, TIME-LAG 3.15A 250V
F2	1-532-286-00	s	FUSE, TIME-LAG 2.5A 250V
IC1	8-759-938-15	s	IC BA178M05

DC-31 BOARD (FOR UC)

Ref No.	Parts No.	SP	Description
	1-622-221-11	o	PRINTED CIECUIT BOARD, DC-31
	1-533-189-11	o	HOLDER, FUSE
	1-561-432-00	o	CONNECTOR CONTACT
	1-561-424-00	o	SOCKET, CONNECTOR 5P
C2	1-161-379-00	s	CERAMIC 0.01 20% 16V
CN005	1-562-738-11	o	HOUSING, CONNECTOR 5P
⚠ F1	1-532-745-11	s	FUSE, GLASS TUBE 3.15A 125V
F2	1-532-744-11	s	FUSE, GLASS TUBE 2.5A 125V
F3	1-532-742-11	s	FUSE, GLASS TUBE 1.6A 125V
IC1	8-759-938-15	s	IC BA178M05

DUS-92 BOARD

Ref No.	Parts No.	SP	Description
	1-615-924-11	o	PRINTED CIRCUIT BOARD, DUS-92
H1003	8-825-578-21	s	ACE HEAD

DUS-147 BOARD

Ref No.	Parts No.	SP	Description
	1-622-261-11	o	PRINTED CIRCUIT BOARD, DUS-147

EC-28 BOARD

Ref No.	Parts No.	SP	Description
	1-622-223-11	o	PRINTED CIRCUIT BOARD, EC-28
H1002	8-825-513-20	s	CTL ERASE (EPP170-58)

HP-30 BOARD

Ref No.	Parts No.	SP	Description
	1-622-220-11	o	PRINTED CIRCUIT BOARD, HP-30
CN1013	1-507-854-00	s	JACK, LARGE TYPE "HEADPHONES"
RV1001	1-237-703-11	s	VAR, CARBON 2k/2k "HEADPHONES LEVEL"

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

IF-132 BOARD

Ref No.	Parts No.	SP	Description
	A-6717-450-B	o	MOUNTED CIRCUIT BOARD, IF-132
C2	1-161-021-11	s	CERAMIC 0.047 10% 25V
C4	1-161-021-11	s	CERAMIC 0.047 10% 25V
C6	1-162-290-31	s	CERAMIC 470PF 10% 50V
C7	1-161-013-00	s	CERAMIC 0.01 10% 25V
C9	1-162-290-31	s	CERAMIC 470PF 10% 50V
C10	1-162-290-31	s	CERAMIC 470PF 10% 50V
C12	1-161-013-00	s	CERAMIC 0.01 10% 25V
C13	1-161-013-00	s	CERAMIC 0.01 10% 25V
C14	1-161-013-00	s	CERAMIC 0.01 10% 25V
C15	1-162-211-31	s	CERAMIC 33PF 5% 50V
C16	1-162-211-31	s	CERAMIC 33PF 5% 50V
C17	1-161-043-00	s	CERAMIC 0.0022 10% 25V
C18	1-161-379-00	s	CERAMIC 0.01 30% 16V
C19	1-161-379-00	s	CERAMIC 0.01 30% 16V
C20	1-161-379-00	s	CERAMIC 0.01 30% 16V
C21	1-161-379-00	s	CERAMIC 0.01 30% 16V
C22	1-161-379-00	s	CERAMIC 0.01 30% 16V
C23	1-161-379-00	s	CERAMIC 0.01 30% 16V
C24	1-161-379-00	s	CERAMIC 0.01 30% 16V
C26	1-162-294-31	s	CERAMIC 0.001 10% 50V
CN1021	1-566-615-11	s	CONNECTOR, SQUARE 33P "REMOTE"
CN1022	1-562-900-11	s	JACK (SMALL TYPE) "RX DATA"
D1	8-719-911-19	s	1SS119
D2	8-719-911-19	s	1SS119
D3	8-719-911-19	s	1SS119
D4	8-719-911-19	s	1SS119
D5	8-719-911-19	s	1SS119
D6	8-719-911-19	s	1SS119
D7	8-719-911-19	s	1SS119
D8	8-719-911-19	s	1SS119
D9	8-719-911-19	s	1SS119
D10	8-719-911-19	s	1SS119
D11	8-719-911-19	s	1SS119
D12	8-719-911-19	s	1SS119
D13	8-719-911-19	s	1SS119
D14	8-719-911-19	s	1SS119
D15	8-719-911-19	s	1SS119
D16	8-719-911-19	s	1SS119
D17	8-719-911-19	s	1SS119
D18	8-719-911-19	s	1SS119
D19	8-719-911-19	s	1SS119
D20	8-719-911-19	s	1SS119
D21	8-719-911-19	s	1SS119
D22	8-719-911-19	s	1SS119
IC1	8-759-600-61	s	M54529AP (MITSUBISHI)
IC2	8-759-600-61	s	M54529AP (MITSUBISHI)
IC3	8-759-600-61	s	M54529AP (MITSUBISHI)
IC4	8-759-600-61	s	M54529AP (MITSUBISHI)
IC5	8-759-345-38	s	HD14538BP (HITACHI)
IC6	8-759-207-73	s	TC4030BPHB (TOSHIBA)
IC7	8-759-240-69	s	TC4069UBP (TOSHIBA)
IC8	8-759-971-32	s	MB88525-189M (FUJITSU)
Q1	8-729-900-89	s	DTC144ES
Q2	8-729-900-89	s	DTC144ES
Q3	8-729-900-89	s	DTC144ES
Q4	8-729-900-89	s	DTC144ES
Q5	8-729-900-89	s	DTC144ES
R11	1-247-895-00	s	CARBON 470k 5% 1/4W
R37	1-247-887-00	s	CARBON 220k 5% 1/4W
R62	1-247-891-00	s	CARBON 330k 5% 1/4W
R73	1-247-887-00	s	CARBON 220k 5% 1/4W
X1	1-567-143-00	s	CERAMIC, 6MHz

KY-105G BOARD

Ref No.	Parts No.	SP	Description
	A-6717-481-A	o	MOUNTED CIRCUIT BOARD, KY-105G
BT1	1-528-227-11	o	BATTERY, LITHIUM (CR-2032)
C1	1-162-211-31	s	CERAMIC 33PF 5% 50V
C2	1-162-211-31	s	CERAMIC 33PF 5% 50V
C4	1-161-021-11	s	CERAMIC 0.047 10% 25V
C13	1-125-443-11	s	ELECT 0.047 5.5V
CP1	1-560-914-00	s	CONNECTOR POST 2P
D1	8-719-911-19	s	1SS119
D2	8-719-911-19	s	1SS119
D4	8-719-904-55	s	GL-5HD5
D5	8-719-911-19	s	1SS119
D6	8-719-911-19	s	1SS119
D7	8-719-911-19	s	1SS119
D8	8-719-904-55	s	GL-5HD5
D9	8-719-911-19	s	1SS119
D10	8-719-911-19	s	1SS119
D11	8-719-802-11	s	TLUG154
D12	8-719-911-19	s	1SS119
D13	8-719-911-19	s	1SS119
D14	8-719-911-19	s	1SS119
D15	8-719-911-19	s	1SS119
D16	8-719-904-55	s	GL-5HD5

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
D17	8-719-911-19	s	1SS119
D18	8-719-904-55	s	GL-5HD5
D19	8-719-904-55	s	GL-5HD5
D20	8-719-911-19	s	1SS119
D21	8-719-904-55	s	GL-5HD5
D22	8-719-911-19	s	1SS119
D23	8-719-911-19	s	1SS119
D24	8-719-911-19	s	1SS119
D25	8-719-904-55	s	GL-5HD5
D26	8-719-911-19	s	1SS119
D29	8-719-802-24	s	TLUY154
D30	8-719-802-24	s	TLUY154
D31	8-719-802-11	s	TLUG154
D35	8-719-911-19	s	1SS119
IC1	8-759-645-17	s	M54517P (MITSUBISHI)
IC2	8-759-970-95	s	MB88525-191M (FUJITSU)
L1	1-407-488-00	s	470uH
ND701	1-807-441-21	s	LED BLOCK
Q1	8-729-900-65	s	DTA144ES
Q2	8-729-900-65	s	DTA144ES
Q3	8-729-900-65	s	DTA144ES
Q4	8-729-900-65	s	DTA144ES
Q5	8-729-900-65	s	DTA144ES
Q6	8-729-900-65	s	DTA144ES
Q7	8-729-117-54	s	2SA1175
Q8	8-729-117-54	s	2SA1175
Q9	8-729-117-54	s	2SA1175
Q10	8-729-117-54	s	2SA1175
Q11	8-729-117-54	s	2SA1175
Q13	8-729-117-54	s	2SA1175
Q14	8-729-117-54	s	2SA1175
Q15	8-729-900-65	s	DTA144ES
Q16	8-729-900-65	s	DTA144ES
Q17	8-729-900-65	s	DTA144ES
Q18	8-729-900-65	s	DTA144ES
Q19	8-729-900-65	s	DTA144ES
Q20	8-729-900-65	s	DTA144ES
Q21	8-729-900-65	s	DTA144ES
Q22	8-729-900-65	s	DTA144ES
Q23	8-729-900-65	s	DTA144ES
Q24	8-729-900-65	s	DTA144ES
Q40	8-729-201-05	s	2SC2878B
Q41	8-729-201-05	s	2SC2878B
R75	1-247-736-11	s	CARBON 56 5% 1/2W
S1	1-570-145-11	s	LEVER SLIDE "FRAME/CTL"
S2	1-553-739-21	s	KEY "RESET"
S3	1-552-539-00	s	KEY "FWD SEARCH"
S4	1-553-739-21	s	KEY "MARK A"
S5	1-553-739-21	s	KEY "MARK B"

Ref No.	Parts No.	SP	Description
S6	1-552-539-00	s	KEY "REV SEARCH"
S7	1-516-995-00	s	LEVER SLIDE "PROGRAM OPERATION"
S8	1-552-539-00	s	KEY "PAUSE"
S9	1-552-539-00	s	KEY "DUB"
S10	1-552-539-00	s	KEY "FF"
S11	1-552-539-00	s	KEY "REC"
S12	1-552-539-00	s	KEY "PLAY"
S13	1-552-539-00	s	KEY "REW"
S14	1-552-539-00	s	KEY "EJECT"
S15	1-552-539-00	s	KEY "STOP"
S16	1-516-995-00	s	LEVER SLIDE "SYSTEM SELECT"
S17	1-516-995-00	s	LEVER SLIDE "INPUT SELECT"
S18	1-516-963-00	s	LEVER SLIDE "AUDIO MONITOR"
X1	1-567-143-00	s	CERAMIC, 6MHz

LM-13 BOARD

Ref No.	Parts No.	SP	Description
	1-618-600-11	o	PRINTED CIRCUIT BOARD, LM-13
C1	1-130-471-00	s	PE TEREPHTHALATE 0.001 5% 50V
C2	1-130-471-00	s	PE TEREPHTHALATE 0.001 5% 50V
M1003	1-541-376-11	s	DC (DNR-4700A) "THREADING"

LP-41 BOARD

Ref No.	Parts No.	SP	Description
	1-623-101-11	o	PRINTED CIRCUIT BOARD, LP-41
D1	8-719-800-89	s	TLY255
D2	8-719-800-89	s	TLY255
D3	8-719-800-89	s	TLY255
R1	1-247-706-11	s	CARBON 330 5% 1/4W
R2	1-247-706-11	s	CARBON 330 5% 1/4W
R3	1-247-706-11	s	CARBON 330 5% 1/4W

MC-28 BOARD

Ref No.	Parts No.	SP	Description
	1-622-222-11	o	PRINTED CIRCUIT BOARD, MC-28
C1	1-161-379-00	s	CERAMIC 10000PF
C2	1-161-379-00	s	CERAMIC 10000PF
CN1019	1-563-988-11	s	JACK, LARGE TYPE 2P "MICROPHONES CH-1"
CN1020	1-563-988-11	s	JACK, LARGE TYPE 2P "MICROPHONES CH-2"

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

MT-29 BOARD

Ref No.	Parts No.	SP	Description
	1-622-219-11	o	PRINTED CIRCUIT BOARD, MT-29
D1	8-719-812-32	s	TLY123
D2	8-719-812-32	s	TLY123
D3	8-719-812-32	s	TLY123
D4	8-719-812-32	s	TLY123
D5	8-719-812-32	s	TLY123
D6	8-719-812-32	s	TLY123
RV1002	1-237-701-11	s	VAR, CARBON 5k "CH-1 REC"
RV1003	1-237-701-11	s	VAR, CARBON 5k "CH-2 REC"
RV1004	1-237-702-11	s	VAR, CARBON 100k "TRACKING"
S1003	1-553-003-00	s	LEVER SLIDE "AUDIO LIMITER"

PD-40 BOARD

Ref No.	Parts No.	SP	Description
	A-6725-569-A	o	MOUNTED CIRCUIT BOARD, PD-40
D1	8-719-200-02	s	10E-2
D2	8-719-200-02	s	10E-2
D3	8-719-200-02	s	10E-2
D4	8-719-200-02	s	10E-2
D5	8-719-200-02	s	10E-2
D6	8-719-200-02	s	10E-2
D7	8-719-200-02	s	10E-2
D8	8-719-200-02	s	10E-2
D9	8-719-200-02	s	10E-2
D10	8-719-200-02	s	10E-2
D11	8-719-200-02	s	10E-2
D12	8-719-200-02	s	10E-2
D13	8-719-200-02	s	10E-2
Q1	8-729-811-11	s	2SD1111
Q2	8-729-178-55	s	2SC2785-E
Q3	8-729-889-40	s	2SD894
Q4	8-729-811-11	s	2SD1111
Q5	8-729-178-55	s	2SC2785-E
Q6	8-729-889-40	s	2SD894
Q7	8-729-889-40	s	2SD894
Q8	8-729-811-11	s	2SD1111
Q9	8-729-178-55	s	2SC2785-E
Q10	8-729-889-40	s	2SD894
Q11	8-729-811-11	s	2SD1111
Q12	8-729-178-55	s	2SC2785-E
Q13	8-729-178-55	s	2SC2785-E
Q14	8-729-889-40	s	2SD894
R6	1-532-685-00	s	LINK, IC
R12	1-532-685-00	s	LINK, IC
R19	1-532-685-00	s	LINK, IC
R25	1-532-685-00	s	LINK, IC
R30	1-532-685-00	s	LINK, IC

PD-41 BOARD

Ref No.	Parts No.	SP	Description
	A-6725-570-A	o	MOUNTED CIRCUIT BOARD, PD-41
D1	8-719-200-02	s	10E-2
D2	8-719-200-02	s	10E-2
D3	8-719-200-02	s	10E-2
D4	8-719-200-02	s	10E-2
D5	8-719-200-02	s	10E-2
D6	8-719-200-02	s	10E-2
Q1	8-729-811-11	s	2SD1111
Q2	8-729-178-55	s	2SC2785-E
Q3	8-729-889-40	s	2SD894
Q4	8-729-811-11	s	2SD1111
Q5	8-729-178-55	s	2SC2785-E
Q6	8-729-889-40	s	2SD894
R6	1-532-685-00	s	LINK, IC
R12	1-532-685-00	s	LINK, IC

PH-5 BOARD

Ref No.	Parts No.	SP	Description
	1-603-737-00	o	PRINTED CIRCUIT BOARD, PH-5
D1	8-719-951-04	s	BR5104S
Q1	8-729-810-22	s	SPS102

PT-9 BOARD

Ref No.	Parts No.	SP	Description
	1-605-018-00	o	PRINTED CIRCUIT BOARD, PT-9
Q1	8-729-377-13	s	2SA771-Y

PTC-30 BOARD

Ref No.	Parts No.	SP	Description
	1-622-260-11	o	PRINTED CIRCUIT BOARD, PTC-30
IC1	8-719-939-50	s	GP1L52
IC3	8-719-939-50	s	GP1L52

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
PTC-33 BOARD			
	1-622-258-11	o	PRINTED CIRCUIT BOARD, PTC-33
IC1	8-719-940-86	s	GP1L53 "THREAD END DET"
IC2	8-719-940-86	s	GP1L53 "UNTHREAD END DET"
PTC-34 BOARD			
	1-622-259-11	o	PRINTED CIRCUIT BOARD, PTC-34
IC1	8-719-940-86	s	GP1L53 "FR UNTHREAD END DET"
PTC-35 BOARD			
	1-622-218-11	o	PRINTED CIRCUIT BOARD, PTC-35
IC1A	8-719-940-86	s	GP1L53 "TAKE-UP ROTATION DET"
IC1B	8-719-940-86	s	GP1L53 "SUPPLY ROTATION DET"
RM-39 BOARD			
	1-618-873-11	o	PRINTED CIRCUIT BOARD, RM-39
C1	1-101-006-00	s	CERAMIC 0.047 50V
C2	1-101-006-00	s	CERAMIC 0.047 50V
L1	1-410-623-11	s	4.7uH
L2	1-410-623-11	s	4.7uH
M1006	8-835-178-01	s	DC FN30-T26N1E "REEL"
RP-36A BOARD			
	A-6711-922-A	o	MOUNTED CIRCUIT BOARD, RP-36A
C2	1-124-236-00	s	ELECT 47 20% 16V
C3	1-161-021-00	s	CERAMIC 0.047 10% 25V
C4	1-161-021-11	s	CERAMIC 0.047 10% 25V
C7	1-161-021-11	s	CERAMIC 0.047 10% 25V
C8	1-161-021-11	s	CERAMIC 0.047 10% 25V
C9	1-124-236-00	s	ELECT 47 20% 16V
C10	1-161-021-11	s	CERAMIC 0.047 10% 25V
C11	1-124-236-00	s	ELECT 47 20% 16V
C12	1-161-021-11	s	CERAMIC 0.047 10% 25V
C14	1-124-255-00	s	ELECT 1 20% 50V
C15	1-161-021-11	s	CERAMIC 0.047 10% 25V
C16	1-161-021-11	s	CERAMIC 0.047 10% 25V
C17	1-124-236-00	s	ELECT 47 20% 16V
C20	1-124-255-00	s	ELECT 1 20% 50V
C21	1-161-021-11	s	CERAMIC 0.047 10% 25V
CP1	1-560-914-00	s	2P
CP2	1-560-914-00	s	2P
CS1	1-561-724-00	o	2P
CS2	1-561-724-00	o	2P
D1	8-719-911-19	s	1SS119
D2	8-719-911-19	s	1SS119
D3	8-719-100-03	s	RD2.7EB2
D4	8-719-911-19	s	1SS119
D5	8-719-911-19	s	1SS119
IC1	8-743-731-00	s	BX-373A (SONY)
IC2	8-729-677-14	s	2SC2771
IC3	8-741-126-50	s	BX-1265 (SONY)
IC4	8-759-240-09	s	TC4009UBP (TOSHIBA)
IC5	8-729-677-14	s	2SC2771
IC6	8-741-126-50	s	BX-1265 (SONY)
L1	1-410-482-31	s	100uH
L3	1-410-482-31	s	100uH
L4	1-410-482-31	s	100uH
Q1	8-729-201-05	s	2SC2878-B
Q2	8-729-201-05	s	2SC2878-B
Q3	8-729-600-24	s	2SC403-51
Q4	8-729-201-05	s	2SC2878-B
Q5	8-729-600-24	s	2SC403-51
Q11	8-729-600-24	s	2SC403-51

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
RV1	1-228-990-00	s	VAR, CARBON 1k
RV2	1-228-990-00	s	VAR, CARBON 1k
RV3	1-228-993-00	s	VAR, CARBON 4.7k
RV4	1-228-991-00	s	VAR, CARBON 2.2k
RV5	1-228-993-00	s	VAR, CARBON 4.7k
RV6	1-228-991-00	s	VAR, CARBON 2.2k
T1	1-426-017-00	s	AF
T2	1-427-472-00	s	OUTPUT
T3	1-426-319-11	s	PB RF
T4	1-427-472-00	s	OUTPUT
T5	1-426-319-00	s	PB RF

SE-46 BOARD

Ref No.	Parts No.	SP	Description
	1-618-599-11	o	PRINTED CIRCUIT BOARD, SE-46
PC1	1-806-232-21	s	DETECTOR MB-1102/S.N

SV-93G BOARD

Ref No.	Parts No.	SP	Description
	⚠ A-6715-397-A	o	MOUNTED CIRCUIT BOARD, SV-93G
C3	1-124-499-11	s	ELECT 1 20% 50V
C6	1-161-377-00	s	CERAMIC 0.0047 30% 16V
C7	1-161-374-11	s	CERAMIC 0.0015 30% 16V
C10	1-131-352-00	s	TANTALUM 6.8 10% 35V
C12	1-161-329-00	s	CERAMIC 0.0068 30% 16V
C14	1-161-021-11	s	CERAMIC 0.047 10% 25V
C17	1-161-057-00	s	CERAMIC 0.033 10% 25V
C18	1-161-013-00	s	CERAMIC 0.01 10% 25V
C19	1-161-013-00	s	CERAMIC 0.01 10% 25V
C104	1-162-215-31	s	CERAMIC 47PF 5% 50V
C106	1-161-047-00	s	CERAMIC 0.0047 10% 25V
C111	1-161-042-00	s	CERAMIC 0.0018 10% 25V
C112	1-161-042-00	s	CERAMIC 0.0018 10% 25V
C116	1-162-286-31	s	CERAMIC 220PF 10% 50V
C120	1-162-288-31	s	CERAMIC 330PF 10% 50V
C203	1-162-211-31	s	CERAMIC 33PF 5% 50V
C204	1-162-211-31	s	CERAMIC 33PF 5% 50V
C301	1-161-013-00	s	CERAMIC 0.01 10% 25V
C302	1-161-040-00	s	CERAMIC 0.0012 10% 25V
C306	1-162-286-31	s	CERAMIC 220PF 10% 50V
C307	1-162-288-31	s	CERAMIC 330PF 10% 50V
C308	1-161-013-00	s	CERAMIC 0.01 10% 25V
C309	1-161-013-00	s	CERAMIC 0.01 10% 25V
C312	1-124-499-11	s	ELECT 1 20% 50V
C409	1-161-379-00	s	CERAMIC 0.01 30% 16V
C410	1-161-379-00	s	CERAMIC 0.01 30% 16V
C411	1-162-207-31	s	CERAMIC 22P 5% 50V
C412	1-162-282-31	s	CERAMIC 100P 10% 50V
C413	1-162-284-31	s	CERAMIC 150P 10% 50V
C418	1-162-282-31	s	CERAMIC 100PF 10% 50V
C422	1-124-464-11	s	ELECT 0.22 20% 50V
C423	1-162-289-31	s	CERAMIC 390PF 10% 50V
C430	1-124-463-00	s	ELECT 0.1 20% 50V
C433	1-124-499-11	s	ELECT 1 20% 50V
C507	1-162-286-31	s	CERAMIC 220PF 10% 50V
C702	1-161-379-00	s	CERAMIC 0.01 30% 16V
C703	1-161-379-00	s	CERAMIC 0.01 30% 16V
C704	1-161-379-00	s	CERAMIC 0.01 30% 16V
C705	1-161-379-00	s	CERAMIC 0.01 30% 16V
C709	1-161-379-00	s	CERAMIC 0.01 30% 16V
C710	1-161-379-00	s	CERAMIC 0.01 30% 16V
C711	1-161-379-00	s	CERAMIC 0.01 30% 16V
C712	1-161-379-00	s	CERAMIC 0.01 30% 16V
C714	1-161-379-00	s	CERAMIC 0.01 30% 16V
C716	1-161-379-00	s	CERAMIC 0.01 30% 16V
C718	1-161-379-00	s	CERAMIC 0.01 30% 16V
C719	1-161-039-00	s	CERAMIC 0.001 10% 25V
D1	8-719-911-19	s	1SS119
D2	8-719-911-19	s	1SS119
D3	8-719-911-19	s	1SS119
D4	8-719-911-19	s	1SS119
D5	8-719-911-19	s	1SS119
D6	8-719-911-19	s	1SS119
D7	8-719-911-55	s	U05G
D101	8-719-911-19	s	1SS119
D103	8-719-911-19	s	1SS119
D104	8-719-911-19	s	1SS119
D105	8-719-911-19	s	1SS119
D106	8-719-911-19	s	1SS119
D107	8-719-911-19	s	1SS119
D108	8-719-911-19	s	1SS119
D109	8-719-911-19	s	1SS119
D110	8-719-911-19	s	1SS119
D111	8-719-911-19	s	1SS119
D112	8-719-911-19	s	1SS119
D113	8-719-911-19	s	1SS119
D201	8-719-911-19	s	1SS119
D202	8-719-911-19	s	1SS119
D204	8-719-911-19	s	1SS119
D205	8-719-911-19	s	1SS119
D206	8-719-911-19	s	1SS119
D207	8-719-911-19	s	1SS119
D208	8-719-911-19	s	1SS119
D210	8-719-100-15	s	RD3.0E-B2
D301	8-719-911-19	s	1SS119
D302	8-719-911-19	s	1SS119
D303	8-719-911-19	s	1SS119
D401	8-719-911-19	s	1SS119
D402	8-719-911-19	s	1SS119
D301	8-719-911-19	s	1SS119
D302	8-719-911-19	s	1SS119
D303	8-719-911-19	s	1SS119

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Ref No.	Parts No.	SP	Description
D401	8-719-911-19	s	1SS119
D402	8-719-911-19	s	1SS119
D403	8-719-911-19	s	1SS119
D404	8-719-911-19	s	1SS119
D405	8-719-911-19	s	1SS119
D406	8-719-911-19	s	1SS119
D407	8-719-911-19	s	1SS119
D408	8-719-911-19	s	1SS119
D409	8-719-911-19	s	1SS119
D410	8-719-911-19	s	1SS119
D411	8-719-911-19	s	1SS119
D412	8-719-911-19	s	1SS119
D501	8-719-911-19	s	1SS119
D600	8-719-911-19	s	1SS119
IC1	8-759-132-40	s	UPC324C (NEC)
IC2	8-759-700-08	s	NJM4558S (JRC)
IC3	8-759-705-58	s	NJM4558D-D (JRC)
IC4	8-759-240-81	s	TC4081BP (TOSHIBA)
IC5	8-759-208-10	s	TC4053BPHB (TOSHIBA)
IC6	8-759-208-10	s	TC4053BPHB (TOSHIBA)
IC8	8-759-132-40	s	UPC324C (NEC)
IC9	8-759-132-40	s	UPC324C (NEC)
IC10	8-759-133-90	s	UPC339C (NEC)
IC11	8-759-240-30	s	TC4030BP (TOSHIBA)
IC12	8-759-135-80	s	UPC358C (NEC)
IC13	8-759-208-10	s	TC4053BPHB (TOSHIBA)
IC14	8-759-205-76	s	TC504013BP (TOSHIBA)
IC15	8-759-200-01	s	TC4001UBP (TOSHIBA)
IC16	8-759-208-10	s	TC4053BPHB (TOSHIBA)
IC17	8-751-941-05	s	CX-194B-5 (SONY)
IC18	8-759-945-41	s	MB88505-547M (FUJITSU)
IC19	8-759-240-30	s	TC4030BP (TOSHIBA)
IC20	8-759-208-10	s	TC4053BPHB (TOSHIBA)
IC21	8-743-915-10	s	BX-3915A (SONY)
IC22	8-759-135-80	s	UPC358C (NEC)
Q1	8-729-178-55	s	2SC2785-E
Q2	8-729-117-54	s	2SA1175-K
Q3	8-729-376-84	s	2SA768-G
Q4	8-729-804-91	s	2SD1682-S
Q5	8-729-177-43	s	2SD774-4
Q101	8-729-900-83	s	DTC124XS
Q102	8-729-178-55	s	2SC2785-E
Q103	8-729-900-83	s	DTC124XS
Q104	8-729-117-54	s	2SA1175-K
Q105	8-729-178-55	s	2SC2785-E
Q106	8-729-178-55	s	2SC2785-E
Q107	8-729-105-72	s	2SK523-L1
Q108	8-729-900-83	s	DTC124XS
Q109	8-729-900-89	s	DTC144ES
Q110	8-729-178-55	s	2SC2785-E
Q111	8-729-376-84	s	2SA768-G
Q112	8-729-117-54	s	2SA1175-K
Q113	8-729-804-91	s	2SD1682-S
Q114	8-729-900-67	s	DTA124XS
Q201	8-729-900-83	s	DTC124XS

Ref No.	Parts No.	SP	Description
Q202	8-729-900-83	s	DTC124XS
Q203	8-729-900-83	s	DTC124XS
Q204	8-729-900-83	s	DTC124XS
Q205	8-729-900-83	s	DTC124XS
Q206	8-729-900-83	s	DTC124XS
Q211	8-719-911-19	s	1SS119
Q301	8-729-178-55	s	2SC2785-E
Q302	8-729-178-55	s	2SC2785-E
Q303	8-729-178-55	s	2SC2785-E
Q304	8-729-178-55	s	2SC2785-E
Q305	8-729-900-83	s	DTC124XS
Q401	8-729-178-55	s	2SC2785-E
Q403	8-729-178-55	s	2SC2785-E
Q404	8-729-178-55	s	2SC2785-E
Q406	8-729-900-83	s	DTC124XS
Q408	8-729-600-24	s	2SC403-51
Q410	8-729-900-67	s	DTA124XS
Q411	8-729-178-55	s	2SC2785-E
Q412	8-729-178-55	s	2SC2785-E
Q413	8-729-900-83	s	DTC124XS
R12	1-247-895-00	s	CARBON 470k 5% 1/4W
R13	1-247-881-00	s	CARBON 120k 5% 1/4W
R17	1-247-895-00	s	CARBON 470k 5% 1/4W
R33	1-247-849-00	s	CARBON 5.6k 5% 1/4W
R36	1-247-887-00	s	CARBON 220k 5% 1/4W
⚠ R42	1-207-621-00	s	WIREWOUND 1.5 10% 3W
R125	1-247-887-00	s	CARBON 220k 5% 1/4W
R147	1-247-895-00	s	CARBON 470k 5% 1/4W
R151	1-247-891-00	s	CARBON 330k 5% 1/4W
R162	1-247-895-00	s	CARBON 470k 5% 1/4W
R172	1-247-891-00	s	CARBON 330k 5% 1/4W
R176	1-247-887-00	s	CARBON 220k 5% 1/4W
R178	1-247-895-00	s	CARBON 470k 5% 1/4W
R260	1-247-895-00	s	CARBON 470k 5% 1/4W
R306	1-247-895-00	s	CARBON 470k 5% 1/4W
R311	1-247-895-00	s	CARBON 470k 5% 1/4W
R326	1-247-883-00	s	CARBON 150k 5% 1/4W
R414	1-247-744-11	s	CARBON 270 5% 1/2W
⚠ R461	1-215-911-11	s	WIREWOUND 100 10% 3W
R600	1-532-685-00	s	IC LINK
RV1	1-228-994-00	s	VAR, CARBON 10k
RV2	1-228-990-00	s	VAR, CARBON 1k
RV3	1-228-990-00	s	VAR, CARBON 1k
RV100	1-228-993-00	s	VAR, CARBON 4.7k
RV101	1-228-994-00	s	VAR, CARBON 10k
RV102	1-228-994-00	s	VAR, METAL GLAZE 10k
RV105	1-228-995-00	s	VAR, METAL GLAZE 22k
RV106	1-228-993-00	s	VAR, CARBON 4.7k
RV107	1-228-995-00	s	vAR, CARBON 22k
RV201	1-228-990-00	s	VAR, CARBON 1k
RV401	1-228-996-00	s	VAR, CARBON 47k
RV402	1-228-996-00	s	VAR, CARBON 47k
RV403	1-228-996-00	s	VAR, CARBON 47k
RV404	1-228-996-00	s	VAR, CARBON 47k
RV405	1-228-996-00	s	VAR, CARBON 47k

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
RV406	1-228-996-00	s	VAR, CARBON 47k
RV407	1-228-997-00	s	VAR, CARBON 100k
X1	1-527-376-00	s	CRYSTAL
X2	1-527-734-00	s	CRYSTAL 6MHz

SY-106(1) BOARD

Ref No.	Parts No.	SP	Description
	⚠A-6717-479-A	o	MOUNTED CIRCUIT BOARD, SY-106(1)
C2	1-161-021-11	s	CERAMIC 0.047 10% 25V
C3	1-161-051-00	s	CERAMIC 0.01 10% 25V
C4	1-161-041-00	s	CERAMIC 0.0015 10% 25V
C5	1-161-051-00	s	CERAMIC 0.01 10% 25V
C6	1-161-055-00	s	CERAMIC 0.022 10% 25V
C10	1-162-286-31	s	CERAMIC 220PF 10% 50V
C11	1-124-499-11	s	ELECT 1 20% 50V
C14	1-162-286-31	s	CERAMIC 220PF 10% 50V
C15	1-161-020-11	s	CERAMIC 0.039 10% 25V
C17	1-124-499-11	s	ELECT 1 20% 50V
C18	1-131-358-00	s	TANTALUM 6.8 10% 25V
C19	1-161-051-00	s	CERAMIC 0.01 10% 25V
C20	1-161-057-00	s	CERAMIC 0.033 10% 25V
C21	1-161-051-00	s	CERAMIC 0.01 10% 25V
C22	1-162-216-31	s	CERAMIC 51PF 5% 50V
C23	1-124-499-11	s	ELECT 1 20% 50V
C24	1-161-021-11	s	CERAMIC 0.047 10% 25V
C26	1-161-021-11	s	CERAMIC 0.047 10% 25V
C30	1-124-499-11	s	ELECT 1 20% 50V
C31	1-161-039-00	s	CERAMIC 0.001 10% 25V
C32	1-162-211-31	s	CERAMIC 33PF 5% 50V
C33	1-161-021-11	s	CERAMIC 0.047 10% 25V
C34	1-161-039-00	s	CERAMIC 0.001 10% 25V
C36	1-161-021-11	s	CERAMIC 0.047 10% 25V
C37	1-162-211-31	s	CERAMIC 33PF 5% 50V
C38	1-161-055-00	s	CERAMIC 0.022 10% 25V
C42	1-161-021-11	s	CERAMIC 0.047 10% 25V
C46	1-162-290-31	s	CERAMIC 470PF 10% 50V
C47	1-162-210-31	s	CERAMIC 30PF 5% 50V
C48	1-162-210-31	s	CERAMIC 30PF 5% 50V
C49	1-124-499-11	s	ELECT 1 20% 50V
C50	1-124-499-11	s	ELECT 1 20% 50V
C55	1-162-290-31	s	CERAMIC 470PF 10% 50V
CN505	1-506-815-11	o	HOUSING, BOARD IN CONNECTOR 6P
	1-563-180-11	o	HOUSING, CONNECTOR 6P
CN507	1-506-821-11	o	HOUSING, BOARD IN CONNECTOR 12P
	1-563-186-11	o	HOUSING, CONNECTOR 12P
CN508	1-506-821-11	o	HOUSING, BOARD IN CONNECTOR 12P
	1-563-186-11	o	HOUSING, CONNECTOR 12P

Ref No.	Parts No.	SP	Description
D1	8-719-911-19	s	1SS119
D2	8-719-911-19	s	1SS119
D3	8-719-911-19	s	1SS119
D4	8-719-911-19	s	1SS119
D5	8-719-911-19	s	1SS119
D6	8-719-911-19	s	1SS119
D7	8-719-911-19	s	1SS119
D8	8-719-911-19	s	1SS119
D9	8-719-911-19	s	1SS119
D10	8-719-911-19	s	1SS119
D11	8-719-911-19	s	1SS119
D12	8-719-911-19	s	1SS119
D13	8-719-911-19	s	1SS119
D14	8-719-911-19	s	1SS119
D15	8-719-911-19	s	1SS119
D16	8-719-911-19	s	1SS119
D17	8-719-911-19	s	1SS119
D18	8-719-911-19	s	1SS119
D20	8-719-911-19	s	1SS119
D21	8-719-911-55	s	U05-G
D22	8-719-911-55	s	U05-G
D23	8-719-911-55	s	U05-G
D24	8-719-911-19	s	1SS119
D25	8-719-911-19	s	1SS119
D26	8-719-911-19	s	1SS119
D31	8-719-911-19	s	1SS119
D32	8-719-911-19	s	1SS119
D33	8-719-911-19	s	1SS119
D43	8-719-101-97	s	1SS97-1
IC1	8-759-145-58	s	UPC4558C (NEC)
IC2	8-759-145-58	s	UPC4558C (NEC)
IC3	8-759-345-38	s	HD14538BP (HITACHI)
IC4	8-759-135-80	s	UPC358C (NEC)
IC5	8-759-145-58	s	UPC4558C (NEC)
IC6	8-759-240-69	s	TC4069UBP (TOSHIBA)
IC7	8-759-970-94	s	MB88525-184M (FUJITSU)
IC8	8-759-729-03	s	NJM2903D (JRC)
IC9	8-759-600-24	s	M54543L (MITSUBISHI)
IC10	8-759-600-24	s	M54543L (MITSUBISHI)
IC11	8-759-240-69	s	TC4069UBP (TOSHIBA)
IC12	8-759-970-93	s	MB88505-571M (FUJITSU)
IC13	8-759-220-00	s	TC40H000P (TOSHIBA)
IC14	8-759-913-99	s	MB88201-173N (FUJITSU)
IC15	8-759-729-03	s	NJM2903D (JRC)
IC17	8-759-240-01	s	TC4001BP (TOSHIBA)
IC18	8-759-240-69	s	TC4069UBP (TOSHIBA)
IC19	8-759-345-38	s	HD14538BP (HITACHI)
IC20	8-759-202-55	s	TC74HC244P (TOSHIBA)
Q1	8-729-177-43	s	2SD774-4
Q3	8-729-889-40	s	2SD894
Q4	8-729-178-55	s	2SC2785-E
Q5	8-729-178-55	s	2SC2785-E
Q6	8-729-178-55	s	2SC2785-E
Q7	8-729-178-55	s	2SC2785-E
Q8	8-729-178-55	s	2SC2785-E
Q9	8-729-900-89	s	DTC144ES
Q10	8-729-117-54	s	2SA1175-K
Q11	8-729-900-89	s	DTC144ES

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
Q12	8-729-117-54	s	2SA1175-K
Q13	8-729-900-89	s	DTC144ES
Q14	8-729-900-89	s	DTC144ES
Q15	8-729-178-55	s	2SC2785-E
Q16	8-729-178-55	s	2SC2785-E
Q17	8-729-900-89	s	DTC144ES
Q18	8-729-900-89	s	DTC144ES
Q19	8-729-900-89	s	DTC144ES
Q20	8-729-178-55	s	2SC2785-E
Q21	8-729-900-89	s	DTC144ES
Q22	8-729-900-89	s	DTC144ES
Q23	8-729-900-89	s	DTC144ES
Q24	8-729-900-89	s	DTC144ES
Q25	8-729-900-89	s	DTC144ES
Q26	8-729-178-55	s	2SC2785-E
Q27	8-729-178-55	s	2SC2785-E
Q28	8-729-117-54	s	2SA1175-K
Q29	8-729-178-55	s	2SC2785-E
Q30	8-729-900-89	s	DTC144ES
Q31	8-729-178-55	s	2SC2785-E
Q32	8-729-900-89	s	DTC144ES
Q33	8-729-900-89	s	DTC144ES
Q34	8-729-900-89	s	DTC144ES
Q35	8-729-382-64	s	2SC1826
Q36	8-729-900-89	s	DTC144ES
Q37	8-729-900-89	s	DTC144ES
Q38	8-729-900-89	s	DTC144ES
Q39	8-729-900-89	s	DTC144ES
Q40	8-729-900-89	s	DTC144ES
Q41	8-729-900-89	s	DTC144ES
Q42	8-729-900-89	s	DTC144ES
Q43	8-729-900-89	s	DTC144ES
Q44	8-729-811-11	s	2SD1111
⚠ R11	1-207-674-00	s	WIREWOUND 4.7 10% 6W
R13	1-247-895-00	s	CARBON 470k 5% 1/4W
R24	1-247-895-00	s	CARBON 470k 5% 1/4W
R32	1-247-891-00	s	CARBON 330k 5% 1/4W
R33	1-247-883-00	s	CARBON 150k 5% 1/4W
R34	1-215-472-00	s	CARBON 130k 5% 1/4W
R38	1-247-891-00	s	CARBON 330k 5% 1/4W
R40	1-247-887-00	s	CARBON 220k 5% 1/4W
R41	1-247-701-11	s	CARBON 120 5% 1/4W
R47	1-247-881-00	s	CARBON 120k 5% 1/4W
R48	1-247-881-00	s	CARBON 120k 5% 1/4W
R76	1-247-887-00	s	CARBON 220k 5% 1/4W
R85	1-247-887-00	s	CARBON 220k 5% 1/4W
R112	1-247-700-11	s	CARBON 100 5% 1/4W
R159	1-214-853-00	s	METAL 360 1% 1/2W
R160	1-214-852-00	s	METAL 330 1% 1/2W
R189	1-247-887-00	s	CARBON 220k 5% 1/4W
R192	1-532-637-00	s	LINK, IC
R201	1-532-605-00	s	LINK, IC
R204	1-532-637-00	s	LINK, IC
R300	1-532-769-21	s	FUSE, MICRO 0.2A

Ref No.	Parts No.	SP	Description
RV1	1-230-722-11	s	VAR, CARBON 22k
RV2	1-230-720-11	s	VAR, CARBON 4.7k
RV3	1-230-720-11	s	VAR, CARBON 4.7k
RV4	1-230-722-11	s	VAR, CARBON 22k
SW1	1-552-509-00	s	DIP
X1	1-567-143-00	s	CERAMIC 6MHz
X2	1-567-192-11	s	CERAMIC 4MHz

TG-22 BOARD

Ref No.	Parts No.	SP	Description
	1-618-597-11	o	PRINTED CIRCUIT BOARD, TG-22
D1	8-719-904-55	s	GL-5HD5

UR-14E BOARD (FOR EK)

Ref No.	Parts No.	SP	Description
	⚠ 1-413-249-12	s	SWITCHING REGULATOR, UR-14E
⚠ C101	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C102	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C103	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C104	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C105	1-136-185-00	s	METALIZED 0.22 20% 250V
C106	1-136-185-00	s	METALIZED 0.22 20% 250V
C107	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C108	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C109	1-124-961-00	s	ELECT 220 20% 200V
C110	1-124-023-00	s	ELECT 4.7 20% 350V
C111	1-124-023-00	s	ELECT 4.7 20% 350V
C112	1-124-549-00	s	ELECT 100 20% 10V
C113	1-124-961-00	s	ELECT 220 20% 200V
C114	1-124-549-00	s	ELECT 100 20% 10V
C201	1-106-351-00	s	MYLAR 0.0022 5% 200V
C202	1-106-351-00	s	MYLAR 0.0022 5% 200V
C203	1-161-825-11	s	CERAMIC 220PF 10% 500V
C204	1-161-825-11	s	CERAMIC 220PF 10% 500V
C205	1-161-825-11	s	CERAMIC 220PF 10% 500V
C206	1-161-825-11	s	CERAMIC 220PF 10% 500V
C207	1-123-357-00	s	ELECT 22 20% 50V
C209	1-106-351-00	s	MYLAR 0.0022 5% 200V
C210	1-136-153-00	s	MYLAR 0.01 5% 50V
C211	1-106-351-00	s	MYLAR 0.0022 5% 200V
C212	1-124-556-00	s	ELECT 2200 20% 16V
C213	1-124-556-00	s	ELECT 2200 20% 16V
C214	1-124-556-00	s	ELECT 2200 20% 16V
C215	1-124-556-00	s	ELECT 2200 20% 16V
C216	1-123-326-00	s	ELECT 3300 20% 16V
C217	1-123-332-00	s	ELECT 47 20% 50V

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
C651	1-124-445-00	s	ELECT 100 20% 16V
C652	1-130-591-11	s	MYLAR 3300PF 2% 100V
C653	1-136-141-00	s	MYLAR 1000PF 10% 50V
C654	1-136-165-00	s	MYLAR 0.1 5% 50V
C655	1-123-318-00	s	ELECT 33 16V
⚠CN101	1-560-436-00	o	REEPTACLE, 3P
	1-561-218-11	o	HOUSING, 3P
	1-561-432-00	o	CONTACT
CN201	1-560-438-00	o	RECEPTACLE, 5P
	1-561-424-11	o	HOUSING, 5P
	1-561-432-00	o	CONTACT
D101	8-719-300-00	s	LB-156
D201	8-719-908-00	s	ESAC33-02CS
D202	8-719-908-00	s	ESAC33-02CS
D203	8-719-900-93	s	V09C
D204	8-719-900-93	s	V09C
D205	8-719-815-55	s	1S1555
D206	8-719-100-61	s	RD11EB2
D208	8-719-101-67	s	RD7.5EL2
D209	8-719-100-30	s	RD5.1EB2
D210	8-719-100-30	s	RD5.1EB2
D651	8-719-200-02	s	10E-2
D652	8-719-100-70	s	RD15EB1
D653	8-719-815-55	s	1S1555
FB101	1-543-060-00	s	CORE
FB102	1-543-060-00	s	CORE
FB201	1-543-060-00	s	CORE
FB202	1-543-060-00	s	CORE
FB203	1-543-060-00	s	CORE
FB204	1-543-060-00	s	CORE
FB205	1-543-060-00	s	CORE
FB206	1-543-060-00	s	CORE
FB207	1-543-060-00	s	CORE
FB208	1-543-060-00	s	CORE
IC651	8-759-937-00	s	MB3759 (FUJITSU)
⚠L101	1-421-848-11	s	LINE FILTER
L201	1-421-849-11	s	CHOKE, 2.4mH
L203	1-408-316-00	s	CHOKE
L204	1-421-850-11	s	CHOKE, 12
L205	1-421-329-00	s	CHOKE
Q101	8-729-901-72	s	2SC3317
Q102	8-729-901-72	s	2SC3317
Q103	8-729-100-13	s	2SC2001
Q104	8-729-100-13	s	2SC2001
Q201	8-729-606-34	s	2SC2603-G
Q202	8-729-117-54	s	2SA1175-F

Ref No.	Parts No.	SP	Description
R101	1-214-947-00	s	METAL 2.7M 1% 1/2W
⚠R102	1-205-636-11	s	CEMENT 3.3 5% 5W
R103	1-246-529-00	s	CARBON 220k 5% 1/4W
R104	1-246-529-00	s	CARBON 220k 5% 1/4W
⚠R105	1-212-934-00	s	METAL 1 5% 1/2W
R106	1-247-700-11	s	NF CARBON 100 5% 1/4W
R107	1-246-529-00	s	CARBON 220k 5% 1/4W
R108	1-246-529-00	s	CARBON 220k 5% 1/4W
⚠R109	1-212-934-00	s	METAL 1 5% 1/2W
R110	1-247-700-11	s	NF CARBON 100 5% 1/4W
⚠R201	1-206-475-00	s	METAL 33 5% 2W
R202	1-535-369-00	s	SHUNT
⚠R203	1-213-151-00	s	METAL 4.7k 5% 5W
R204	1-247-713-11	s	NF CARBON 1k 5% 1/4W
R205	1-247-719-11	s	NF CARBON 3.3k 5% 1/4W
R206	1-249-455-11	s	NF CARBON 4.7k 5% 1/4W
R207	1-247-717-11	s	NF CARBON 2.2k 5% 1/4W
R208	1-247-123-00	s	NF CARBON 470 5% 1/4W
R209	1-247-704-11	s	NF CARBON 220 5% 1/4W
R212	1-247-857-00	s	NF CARBON 220 5% 1/2W
R651	1-249-425-11	s	NF CARBON 4.7k 5% 1/6W
RV651	1-228-644-00	s	VAR, METAL 1k 0.3W
⚠T101	1-448-423-11	s	CONVERTER
T102	1-437-120-00	s	DRIVE

UR-14 BOARD (FOR UC)

Ref No.	Parts No.	SP	Description
	⚠1-413-248-11	s	SWITCHING REGULATOR, UR-14
⚠C101	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C102	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C103	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C104	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C105	1-136-212-00	s	MYLAR 0.1 20% 250V
C106	1-136-212-00	s	MYLAR 0.1 20% 250V
C107	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C108	1-161-742-00	s	CERAMIC 2200PF 20% 400V
C109	1-124-961-00	s	ELECT 220 20% 200V
C110	1-124-023-00	s	ELECT 4.7 20% 350V

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
C111	1-124-023-00	s	ELECT 4.7 20% 350V
C112	1-124-549-00	s	ELECT 100 20% 10V
C113	1-124-961-00	s	ELECT 220 20% 200V
C114	1-124-549-00	s	ELECT 100 20% 10V
C201	1-108-413-00	s	MYLAR 2200PF 10% 200V
C202	1-108-413-00	s	MYLAR 2200PF 10% 200V
C203	1-161-825-11	s	CERAMIC 220PF 10% 500V
C204	1-161-825-11	s	CERAMIC 220PF 10% 500V
C205	1-161-825-11	s	CERAMIC 220PF 10% 500V
C206	1-161-825-11	s	CERAMIC 220PF 10% 500V
C207	1-123-357-00	s	ELECT 22 20% 50V
C209	1-108-413-00	s	MYLAR 2200PF 10% 200V
C210	1-136-153-00	s	MYLAR 0.01 5% 50V
C211	1-130-516-00	s	MYLAR 0.01 5% 50V
C212	1-124-556-00	s	ELECT 2200 20% 16V
C213	1-124-556-00	s	ELECT 2200 20% 16V
C214	1-124-556-00	s	ELECT 2200 20% 16V
C215	1-124-556-00	s	ELECT 2200 20% 16V
C216	1-123-326-00	s	ELECT 3300 20% 16V
C217	1-123-332-00	s	ELECT 47 20% 50V
C651	1-124-445-00	s	ELECT 100 20% 16V
C652	1-130-591-11	s	MYLAR 3300PF 2% 100V
C653	1-136-141-00	s	MYLAR 1000PF 10% 50V
C654	1-136-165-00	s	MYLAR 0.1 5% 50V
C655	1-123-318-00	s	ELECT 33 16V
⚠CN101	1-560-436-00	o	REEPTACLE, 3P
	1-561-218-11	o	HOUSING, 3P
	1-561-254-11	o	CONTACT
CN201	1-560-438-00	o	RECEPTACLE, 5P
	1-561-424-11	o	HOUSING, 5P
	1-561-254-11	o	CONTACT
D101	8-719-300-00	s	LB-156
D201	8-719-908-00	s	ESAC33-02CS
D202	8-719-908-00	s	ESAC33-02CS
D203	8-719-900-93	s	V09C
D204	8-719-900-93	s	V09C
D205	8-719-815-55	s	1S1555
D206	8-719-100-61	s	RD11EB2
D208	8-719-101-67	s	RD7.5EL2
D209	8-719-100-30	s	RD5.1EB2
D210	8-719-100-30	s	RD5.1EB2
D651	8-719-200-02	s	10E-2
D652	8-719-100-70	s	RD15EB1
D653	8-719-815-55	s	1S1555
FB101	1-543-060-00	s	CORE
FB102	1-543-060-00	s	CORE
FB201	1-543-060-00	s	CORE
FB202	1-543-060-00	s	CORE
FB203	1-543-060-00	s	CORE

Ref No.	Parts No.	SP	Description
FB204	1-543-060-00	s	CORE
FB205	1-543-060-00	s	CORE
FB206	1-543-060-00	s	CORE
FB207	1-543-060-00	s	CORE
FB208	1-543-060-00	s	CORE
FB209	1-543-060-00	s	CORE
IC651	8-759-937-00	s	MB3759 (FUJITSU)
⚠L101	1-421-848-11	s	LINE FILTER
L201	1-421-849-11	s	CHOKE, 2.4mH
L203	1-408-316-00	s	CHOKE
L204	1-421-850-11	s	CHOKE, 12
L205	1-421-329-00	s	CHOKE
Q101	8-729-901-72	s	2SC3317
Q102	8-729-901-72	s	2SC3317
Q103	8-729-100-13	s	2SC2001
Q104	8-729-100-13	s	2SC2001
Q201	8-729-600-27	s	2SC2603-F
Q202	8-729-117-54	s	2SA1175-F
R101	1-214-947-00	s	METAL 2.7M 1% 1/2W
⚠R102	1-205-715-11	s	CEMENT 3.3 5% 5W
R103	1-246-529-00	s	CARBON 220k 5% 1/4W
R104	1-246-529-00	s	CARBON 220k 5% 1/4W
⚠R105	1-212-934-00	s	METAL 1 5% 1/2W
R106	1-247-107-00	s	NF CARBON 100 5% 1/5W
R107	1-246-529-00	s	CARBON 220k 5% 1/4W
R108	1-246-529-00	s	CARBON 220k 5% 1/4W
⚠R109	1-212-934-00	s	METAL 1 5% 1/2W
R110	1-247-107-00	s	NF CARBON 100 5% 1/4W
⚠R111	1-205-715-00	s	CEMENT 3.3 5% 5W
R201	1-206-475-00	s	METAL 33 5% 2W
R202	1-535-369-00	s	SHUNT
⚠R203	1-213-151-00	s	METAL 4.7k 5% 5W
R204	1-247-131-00	s	NF CARBON 1k 5% 1/4W
R205	1-247-143-00	s	NF CARBON 3.3k 5% 1/4W
R206	1-249-455-11	s	NF CARBON 4.7k 5% 1/4W
R207	1-247-139-00	s	NF CARBON 2.2k 5% 1/4W
R208	1-247-123-00	s	NF CARBON 470 5% 1/4W
R209	1-247-115-00	s	NF CARBON 220 5% 1/4W
R212	1-247-224-00	s	NF CARBON 220 5% 1/2W
R651	1-249-425-11	s	NF CARBON 4.7k 5% 1/6W

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Ref No.	Parts No.	SP	Description			
RV651	1-228-644-00	s	VAR, METAL 1k 0.3W			
⚠T101	1-448-423-11	s	CONVERTER			
T102	1-437-120-00	s	DRIVE			

VO-19A BOARD

Ref No.	Parts No.	SP	Description			
	A-6711-920-A	o	MOUNTED CIRCUIT BOARD, VO-19A			
C22	1-163-021-00	s	CERAMIC CHIP	0.01	1	50V
C24	1-124-236-00	s	ELECT	47	20%	10V
C26	1-124-236-00	s	ELECT	47	20%	10V
C41	1-124-236-00	s	ELECT	47	20%	10V
C42	1-124-236-00	s	ELECT	47	20%	10V
C43	1-124-236-00	s	ELECT	47	20%	10V
C45	1-124-236-00	s	ELECT	47	20%	10V
C47	1-124-236-00	s	ELECT	47	20%	10V
C48	1-124-462-00	s	ELECT	10	20%	16V
C49	1-124-236-00	s	ELECT	47	20%	10V
C54	1-124-236-00	s	ELECT	47	20%	10V
C69	1-124-236-00	s	ELECT	47	20%	10V
C74	1-124-236-00	s	ELECT	47	20%	10V
C81	1-126-101-11	s	ELECT	100	20%	16V
C82	1-163-021-00	s	CERAMIC CHIP	0.01	1	50V
C87	1-163-021-00	s	CERAMIC CHIP	0.01	1	50V
C90	1-124-236-00	s	ELECT	47	20%	10V
C91	1-124-236-00	s	ELECT	47	20%	10V
C92	1-123-611-00	s	ELECT	1	20%	50V
C96	1-124-462-00	s	ELECT	10	20%	16V
C99	1-124-236-00	s	ELECT	47	20%	10V
C100	1-124-236-00	s	ELECT	47	20%	10V
C101	1-124-236-00	s	ELECT	47	20%	10V
C102	1-123-611-00	s	ELECT	1	20%	50V
C103	1-124-236-00	s	ELECT	47	20%	10V
C107	1-124-236-00	s	ELECT	47	20%	10V
C110	1-124-236-00	s	ELECT	47	20%	10V
C111	1-124-236-00	s	ELECT	47	20%	10V
C112	1-124-236-00	s	ELECT	47	20%	10V
C115	1-123-611-00	s	ELECT	1	20%	50V
C117	1-124-236-00	s	ELECT	47	20%	10V
C118	1-124-236-00	s	ELECT	47	20%	10V
C128	1-124-236-00	s	ELECT	47	20%	10V
C140	1-124-236-00	s	ELECT	47	20%	10V
C141	1-123-661-00	s	ELECT	100	20%	6.3V
C152	1-124-236-00	s	ELECT	47	20%	10V
C157	1-124-236-00	s	ELECT	47	20%	10V
C158	1-124-462-00	s	ELECT	10	20%	16V
C159	1-124-236-00	s	ELECT	47	20%	10V
C161	1-124-462-00	s	ELECT	10	20%	16V
C164	1-124-236-00	s	ELECT	47	20%	10V
C173	1-124-236-00	s	ELECT	47	20%	10V
C177	1-124-236-00	s	ELECT	47	20%	10V
C178	1-124-236-00	s	ELECT	47	20%	10V
C186	1-124-236-00	s	ELECT	47	20%	10V

Ref No.	Parts No.	SP	Description			
C201	1-107-026-00	s	MICA	5.1P		50V
C204	1-163-033-00	s	CERAMIC CHIP	0.022		50V
C206	1-126-101-11	s	ELECT	100	20%	16V
C207	1-126-101-11	s	ELECT	100	20%	16V
C212	1-126-101-11	s	ELECT	100	20%	16V
C213	1-161-051-00	s	CERAMIC	0.01	10%	50V
C303	1-124-236-00	s	ELECT	47	20%	10V
C305	1-124-236-00	s	ELECT	47	20%	10V
C307	1-109-688-00	s	MICA	430P	1%	500V
C309	1-124-462-00	s	ELECT	10	20%	16V
C310	1-124-462-00	s	ELECT	10	20%	16V
C311	1-124-462-00	s	ELECT	10	20%	16V
C352	1-163-016-00	s	CERAMIC CHIP	0.0039	10%	50V
CF1	1-527-849-00	s	CERAMIC FILTER			
CF2	1-527-849-00	s	CERAMIC FILTER			
CN1002	1-563-356-11	s	CONNECTOR, MULTI 8P "TV"			
CN1003	1-563-354-11	s	BNC "VIDEO OUT-1"			
CN1004	1-563-354-11	s	BNC "VIDEO OUT-2"			
CN1006	1-563-354-11	s	BNC "VIDEO IN"			
CN1009	1-563-989-11	s	JACK,PIN (RCA) 1P "AUDIO MONITOR"			
CN1023	1-508-945-00	s	CONNECTOR (R-M) "DUB IN"			
CN1024	1-561-045-00	s	CONNECTOR (R-F) "DUB OUT"			
D1	8-719-101-23	s	1SS123			
D2	8-719-101-23	s	1SS123			
D3	8-719-101-23	s	1SS123			
D4	8-719-101-23	s	1SS123			
D5	8-719-105-57	s	RD3.9M-B1			
D7	8-719-100-03	s	1S2835			
D10	8-719-100-05	s	1S2837			
D11	8-719-100-05	s	1S2837			
D13	8-719-100-03	s	1S2835			
D14	8-719-100-03	s	1S2835			
D15	8-719-100-05	s	1S2837			
D16	8-719-100-05	s	1S2837			
D301	8-719-100-05	s	1S2837			
D302	8-719-100-05	s	1S2837			
D303	8-719-100-03	s	1S2835			
D304	8-719-105-63	s	RD4.3M-B1			
D305	8-719-101-23	s	1SS123			
D351	8-719-105-59	s	RD3.9M-B1			
DL1	1-415-162-31	s	DELAY LINE			
FL1	1-231-580-21	s	HIGH PASS			
FL2	1-235-474-11	s	LOW PASS			
FL3	1-231-357-21	s	LOW PASS			
FL4	1-231-579-21	s	LOW PASS			
FL5	1-231-581-21	s	HIGH PASS			

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Ref No.	Parts No.	SP	Description
IC1	8-759-240-51	s	TC4051BP (TOSHIBA)
IC2	8-759-601-87	s	CX-187 (SONY)
IC4	8-759-200-60	s	TA7060AP (TOSHIBA)
IC6	8-743-880-00	s	BX-388 (SONY)
IC7	8-759-200-60	s	TA7060AP (TOSHIBA)
IC8	8-752-321-75	s	CXL5005P (SONY)
IC9	8-759-708-05	s	NJM78L05 (JRC)
IC10	8-759-708-09	s	NJM78L09 (JRC)
IC11	8-759-927-56	s	BA7021
IC13	8-759-245-28	s	TC4528BP (TOSHIBA)
IC17	8-759-240-53	s	TC4053BP (TOSHIBA)
IC18	8-759-001-16	s	HD10116L (HITACHI)
IC19	8-751-340-10	s	CX-134A (SONY)
IC20	8-759-240-01	s	TC4001BP (TOSHIBA)
IC21	8-759-240-11	s	TC4011BP (TOSHIBA)
IC22	8-759-400-06	s	AN608P (TOSHIBA)
IC23	8-759-400-06	s	AN608P (TOSHIBA)
L1	1-410-482-31	s	100
L2	1-410-482-31	s	100
L4	1-410-473-11	s	18
L5	1-410-473-11	s	18
L6	1-410-482-31	s	100
L8	1-410-470-11	s	10
L11	1-410-482-31	s	100
L12	1-410-482-31	s	100
L13	1-410-482-31	s	100
L14	1-410-478-11	s	47
L15	1-410-482-31	s	100
L16	1-410-482-31	s	100
L17	1-410-482-31	s	100
L18	1-410-482-31	s	100
L19	1-410-482-31	s	100
L20	1-410-482-31	s	100
L22	1-410-482-31	s	100
L25	1-410-476-11	s	33
L27	1-410-482-31	s	100
L28	1-410-482-31	s	100
L29	1-410-482-31	s	100
L30	1-420-984-00	s	AIR-CORE
L32	1-410-482-31	s	100
L33	1-410-482-31	s	100
L34	1-410-482-31	s	100
L35	1-410-494-11	s	1mH
L36	1-410-482-31	s	100
L37	1-410-482-31	s	100
L38	1-410-471-11	s	12
L39	1-410-087-31	s	10mH
L40	1-410-471-11	s	12
L41	1-410-087-31	s	10mH
L42	1-410-482-31	s	100
L43	1-410-473-11	s	18
L301	1-410-482-31	s	100
LV2	1-407-268-00	s	1.5mH

Ref No.	Parts No.	SP	Description
Q1	8-729-271-22	s	2SC2712G
Q2	8-729-271-22	s	2SC2712G
Q4	8-729-271-22	s	2SC2712G
Q5	8-729-901-01	s	DTC144EK
Q6	8-729-202-39	s	2SC3326N-B
Q9	8-729-122-63	s	2SA1226
Q10	8-729-122-63	s	2SA1226
Q11	8-729-102-07	s	2SC2223-F13
Q12	8-729-102-07	s	2SC2223-F13
Q13	8-729-202-38	s	2SC3326N-B
Q14	8-729-271-22	s	2SC2712G
Q15	8-729-271-22	s	2SC2712G
Q16	8-729-271-22	s	2SC2712G
Q17	8-729-271-22	s	2SC2712G
Q18	8-729-600-24	s	2SC403SP-51
Q19	8-729-271-22	s	2SC2712G
Q20	8-729-216-21	s	2SA1162-Y
Q21	8-729-271-22	s	2SC2712G
Q22	8-729-271-22	s	2SC2712G
Q23	8-729-271-22	s	2SC2712G
Q25	8-729-901-01	s	DTC144EK
Q26	8-729-122-63	s	2SA1226
Q27	8-729-271-22	s	2SC2712G
Q28	8-729-271-22	s	2SC2712G
Q29	8-729-216-21	s	2SA1162-Y
Q30	8-729-271-22	s	2SC2712G
Q31	8-729-216-21	s	2SA1162-Y
Q32	8-729-901-01	s	DTC144EK
Q33	8-729-216-21	s	2SA1162-Y
Q34	8-729-271-22	s	2SC2712G
Q44	8-729-271-22	s	2SC2712G
Q45	8-729-271-22	s	2SC2712G
Q46	8-729-271-22	s	2SC2712G
Q48	8-729-216-21	s	2SA1162-Y
Q49	8-729-271-22	s	2SC2712G
Q50	8-729-216-21	s	2SA1162-Y
Q51	8-729-901-01	s	DTC144EK
Q52	8-729-271-22	s	2SC2712G
Q53	8-729-271-22	s	2SC2712G
Q54	8-729-271-22	s	2SC2712G
Q55	8-729-271-22	s	2SC2712G
Q56	8-729-271-22	s	2SC2712G
Q57	8-729-202-38	s	2SC3326N-B
Q58	8-729-271-22	s	2SC2712G
Q59	8-729-202-38	s	2SC3326N-B
Q60	8-729-271-22	s	2SC2712G
Q61	8-729-102-07	s	2SC2223-F13
Q62	8-729-102-07	s	2SC2223-F13
Q63	8-729-102-07	s	2SC2223-F13
Q66	8-729-178-55	s	2SC2785-E
Q67	8-729-216-21	s	2SA1162-Y
Q69	8-729-103-43	s	2SB734
Q70	8-729-271-22	s	2SC2712G
Q72	8-729-901-01	s	DTC144EK
Q73	8-729-271-22	s	2SC2712G
Q74	8-729-901-01	s	DTC144EK
Q75	8-729-271-22	s	2SC2712G
Q76	8-729-202-38	s	2SC3326N-B

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Ref No.	Parts No.	SP	Description			
Q77	8-729-901-01	s	DTC144EK			
Q301	8-729-271-22	s	2SC2712G			
Q302	8-729-271-22	s	2SC2712G			
Q303	8-729-202-38	s	2SC3326N-B			
Q304	8-729-271-22	s	2SC2712G			
Q306	8-729-122-63	s	2SA1226			
Q307	8-729-600-24	s	2SC403SP-51			
Q308	8-729-600-24	s	2SC403SP-51			
Q309	8-729-600-24	s	2SC403SP-51			
Q310	8-729-122-63	s	2SA1226			
Q311	8-729-901-01	s	DTC144EK			
Q312	8-729-202-39	s	2SC3326N-B			
Q351	8-729-113-33	s	2SB733-4			
Q352	8-729-216-21	s	2SA1162-Y			
Q353	8-729-901-01	s	DTC144EK			
R42	1-216-643-11	s	METAL CHIP	470	0.5%	1/10W
R43	1-216-643-11	s	METAL CHIP	470	0.5%	1/10W
R55	1-216-644-11	s	METAL CHIP	510	0.5%	1/10W
R59	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R61	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R64	1-216-650-11	s	METAL CHIP	910	0.5%	1/10W
R65	1-216-674-11	s	METAL CHIP	9.1k	0.5%	1/10W
R67	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R68	1-216-030-00	s	METAL CHIP	160	0.5%	1/10W
R69	1-216-030-00	s	METAL CHIP	160	0.5%	1/10W
R70	1-216-638-11	s	METAL CHIP	300	0.5%	1/10W
R71	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R72	1-216-667-11	s	METAL CHIP	4.7k	0.5%	1/10W
R73	1-216-625-11	s	METAL CHIP	82	0.5%	1/10W
R74	1-216-659-11	s	METAL CHIP	2.2k	0.5%	1/10W
R75	1-247-738-11	s	CARBON	82	5%	1/2W
R79	1-216-624-11	s	METAL CHIP	75	0.5%	1/10W
R95	1-216-650-11	s	METAL CHIP	910	0.5%	1/10W
R101	1-216-032-00	s	METAL CHIP	200	5%	1/10W
R114	1-216-036-00	s	METAL CHIP	300	5%	1/10W
R181	1-216-646-11	s	METAL CHIP	620	0.5%	1/10W
R182	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R183	1-216-650-11	s	METAL CHIP	910	0.5%	1/10W
R184	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R185	1-216-650-11	s	METAL CHIP	910	0.5%	1/10W
R186	1-216-650-11	s	METAL CHIP	910	0.5%	1/10W
R187	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R188	1-216-650-11	s	METAL CHIP	910	0.5%	1/10W
R198	1-216-657-11	s	METAL CHIP	1.8k	0.5%	1/10W
R199	1-216-657-11	s	METAL CHIP	1.8k	0.5%	1/10W
R202	1-216-643-11	s	METAL CHIP	470	0.5%	1/10W
R203	1-216-653-11	s	METAL CHIP	1.2k	0.5%	1/10W
R204	1-216-612-11	s	METAL CHIP	24	0.5%	1/10W
R207	1-216-066-00	s	METAL CHIP	5.1k	5%	1/10W
R208	1-216-066-00	s	METAL CHIP	5.1k	5%	1/10W
R214	1-216-204-00	s	METAL CHIP	1.8k	5%	1/8W
R229	1-216-659-11	s	METAL CHIP	2.2k	0.5%	1/10W
R230	1-216-659-11	s	METAL CHIP	2.2k	0.5%	1/10W
R249	1-216-653-11	s	METAL CHIP	1.2k	0.5%	1/10W
R254	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W

Ref No.	Parts No.	SP	Description			
R257	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R265	1-212-853-00	s	FUSIBLE	6.8	5%	1/4W
R302	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R303	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R305	1-216-628-11	s	METAL CHIP	110	0.5%	1/10W
R312	1-216-117-91	s	METAL CHIP	680	5%	1/10W
R313	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R314	1-216-295-00	s	METAL CHIP	0	5%	1/10W
R315	1-216-638-11	s	METAL CHIP	300	0.5%	1/10W
R317	1-216-655-11	s	METAL CHIP	1.5k	0.5%	1/10W
R328	1-216-653-11	s	METAL CHIP	1.2k	0.5%	1/10W
R333	1-216-651-11	s	METAL CHIP	1k	0.5%	1/10W
R340	1-532-679-21	s	IC LINC			
R354	1-216-083-00	s	METAL CHIP	27k	0.5%	1/10W
RV1	1-228-994-00	s	VAR, CARBON	10k		
RV4	1-228-993-00	s	VAR, CARBON	4.7k		
RV6	1-228-993-00	s	VAR, CARBON	4.7k		
RV7	1-228-991-00	s	VAR, CARBON	2.2k		
RV8	1-228-990-00	s	VAR, CARBON	1k		
RV9	1-228-995-00	s	VAR, CARBON	22k		
RV12	1-228-990-00	s	VAR, CARBON	1k		
RV14	1-228-993-00	s	VAR, CARBON	4.7k		
RV15	1-228-991-00	s	VAR, CARBON	2.2k		
RV16	1-228-995-00	s	VAR, CARBON	22k		
RV17	1-228-991-00	s	VAR, CARBON	2.2k		
RV18	1-228-991-00	s	VAR, CARBON	2.2k		
RV19	1-228-991-00	s	VAR, CARBON	2.2k		
RV20	1-228-991-00	s	VAR, CARBON	2.2k		
RV21	1-228-991-00	s	VAR, CARBON	2.2k		
RV204	1-228-993-00	s	VAR, CARBON	4.7k		
RV301	1-228-990-00	s	VAR, CARBON	1k		
RV302	1-228-993-00	s	VAR, CARBON	4.7k		
RV303	1-228-993-00	s	VAR, CARBON	4.7k		

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

Ref No.	Parts No.	SP	Description
FRAME			
	A-6709-604-A	s	HEAD DRUM ASSY, DUH-38B-R
	A-6709-561-A	s	UPPER DRUM ASSY, DUR-38-R
⚠	1-413-249-12	s	SWITCHING REGULATOR UR-14E (FOR EK)
	1-413-248-11	s	SWITCHING REGULATOR UR-14 (FOR UC)
⚠CN1001	1-509-546-00	s	3P INLET
CN1002	1-563-356-11	s	CONNECTOR, MULTI 8P "TV"
CN1003	1-563-354-11	o	BNC "VIDEO OUT-1"
CN1004	1-563-354-11	o	BNC "VIDEO OUT-2"
CN1006	1-563-354-11	o	BNC "VUDEO IN"
CN1009	1-563-989-11	s	JACK, PIN (RCA) 1P "AUDIO MONITOR"
CN1011	1-507-312-00	s	RECEPTACLE 10P "RF MOD"
CN1012	1-507-410-00	s	RECEPTACLE (F TYPE) "RF OUT"
CN1015	1-563-029-21	s	JACK 4P "AUDIO INPUT/OUTPUT"
CN1022	1-563-355-11	s	JACK "REMOTE"
CN1023	1-508-945-00	s	CONNECTOR (R-F) "DUB IN"
CN1024	1-561-045-00	s	CONNECTOR (R-F) "DUB OUT"
CS1001	1-586-633-00	s	CONDENSATION SENSOR
PM1001	1-454-415-11	s	SOLENOID, PLUNGER 12V 9.5/52 OHM "TAKE-UP IDLER"
PM1002	1-454-417-31	s	SOLENOID, PLUNGER 12V 12/90 OHM "TAKE-UP BRAKE"
PM1004	1-454-415-11	s	SOLENOID, PLUNGER 12V 9.5/52 OHM "SUPPLY IDLER"
PM1005	1-454-417-31	s	SOLENOID, PLUNGER 12V 12/90 OHM "SUPPLY BRAKE"
PM1006	1-454-446-11	s	SOLENOID, PLUNGER 12V 80 OHM "SKEW"
PM1007	1-454-417-31	s	SOLENOID, PLUNGER 12V 12/90 OHM "SEARCH"
PM1008	1-454-416-31	s	SOLENOID, PLUNGER 12V, 7/35 OHM "PINCH"
M1001	8-835-258-01	s	DC, BHF-1915B "CAPSTAN"
M1005	8-835-179-01	s	DC, MCB2B15 "CASSETTE COMPARTMENT"
M1006	8-835-178-01	s	DC FN30-T26N1E "REEL"
ME1001	1-520-393-00	s	METER, AUDIO
ME1002	1-520-393-00	s	METER, AUDIO
RV1001	1-237-703-11	s	VAR, CARBON 2k/2k "HEADPHONES LEVEL"
RV1002	1-237-701-11	s	VAR, CARBON 5k "CH-1 REC"
RV1003	1-237-701-11	s	VAR, CARBON 5k "CH-2 REC"
RV1004	1-237-702-11	s	VAR, CARBON 100k "TRACKING"

Ref No.	Parts No.	SP	Description
⚠S1001	1-570-117-31	s	SWITCH, ROCKER "AC POWER"
	1-509-898-00	s	RECEPTACLE
	1-509-910-00	s	HOUSING, CONNECTOR (2P)
	1-561-218-00	o	CONNECTOR SOCKET, 3P
	1-561-432-00	s	CONNECTOR CONTACT
S1002	1-553-789-00	s	SWITCH, SLIDE "TIMER"

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Parts List".

15-4. PACKING MATERIAL AND ACCESSORIES (SUPPLIED)

Parts No.	SP	Description
⚠1-556-760-11	s	CORD, POWER (FOR EK)
1-551-812-11	s	CORD, POWER (FOR UC)
3-662-364-00	s	BAG, PROTECTION
3-701-630-00	s	BAG, POLYETHYLENE
3-718-355-01	o	COVER, RF
3-718-359-01	o	CUSHION (UPPER)
3-718-360-01	o	CUSHION (LOWER)
3-718-377-01	o	INDIVIDUAL CARTON
⚠3-769-725-01	s	MANUAL, INSTRUCTION (FOR EK)
3-769-725-21	s	MANUAL, INSTRUCTION (FOR UC)

15-5. FIXTURE

Parts No.	SP	Description
J-6001-820-A	s	DRUM ECCENTRICITY GAUGE (3)
J-6001-830-A	s	DRUM ECCENTRICITY GAUGE (2)
J-6001-840-A	s	DRUM ECCENTRICITY GAUGE (1)
J-6001-930-A	s	DRUM ECCENTRICITY GAUGE (4)
J-6009-830-A	s	FLATNESS PLATE
J-6026-240-A	s	ADJUSTMENT DRIVER
J-6130-010-A	s	REEL TABLE HEIGHT CHECK BASE JIG
J-6130-020-A	s	REEL TABLE HEIGHT CHECK JIG
J-6153-020-A	s	DIHEDRAL ADJUSTMENT DRIVER
J-6150-140-A	s	ECCENTRICITY SCTEWDRIVER 6 MM DIA.
J-6153-580-A	s	PINCH LEVER ADJUSTMENT JIG
Y-2031-001-0	s	CLEANING FLUID
2-034-697-00	s	CLEANING PIECE
3-702-216-01	s	BACK TENSION ADJUSTMENT JIG
7-661-018-01	s	SONY OIL
7-732-050-20	s	TENISON SCALE (50g full scale)
7-732-050-30	s	TENSION SCALE (100g full scale)
7-732-050-40	s	TENSION SCALE (200g full scale)
7-732-050-50	s	TENSION SCALE (500g full scale)
8-899-999-53	s	TORQUE MEASUREMENT TAPE
8-960-015-04	s	ALIGNMENT TAPE RR5-3 SA
8-960-035-61	s	ALIGNMENT TAPE RR5-2 SC PAL
9-911-053-00	s	THICKNESS GAUGE

U-matic.

VIDEO CASSETTE RECORDER

VO-7630

SUPPLEMENT-1

Please file this SUPPLEMENT to your MANUAL

CONTENTS;

SECTION 5 LINK AND DRIVE SYSTEM ALIGNMENT

VO-7630 (UC/EK)
9-966-996-81

Sony Corporation

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5-10. Pinch Lever Azimuth Adjustment

Tool: Pinch lever adjustment jig

Mode: EJECT completion mode

Check procudure:

(1) Remove the Pre-set Deck and install the pinch lever adjustment jig to the capstan shaft as shown in the figure.

(2) Push tne pinch lever in the direction of arrow A and set the notches of the pinch lever to B and C.

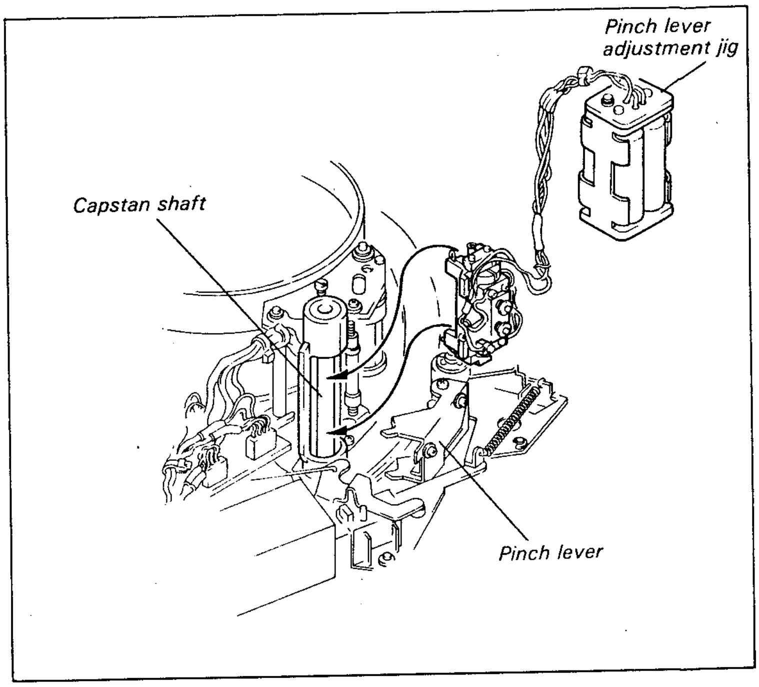
(3) When lightly pushing the pinch lever in the derection of arrow A, check that the green and the red lamps light.

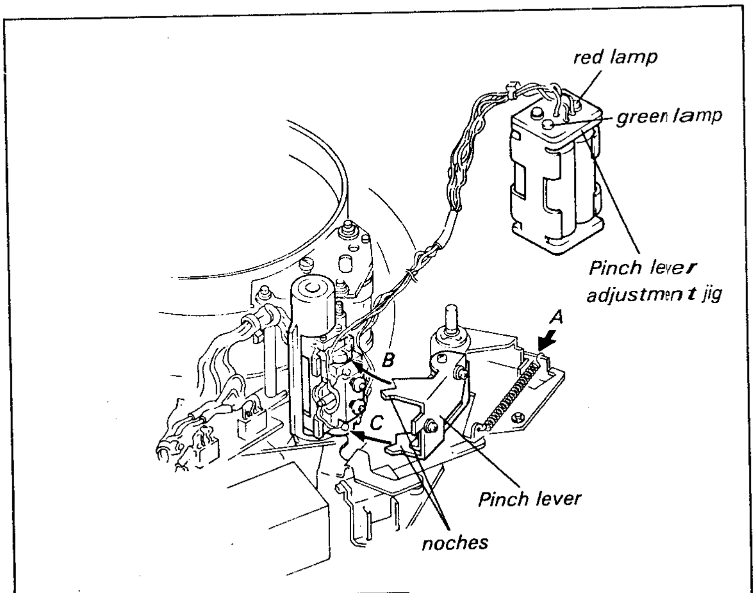
Adjustment procedure:

(1) Loosen the two fixing screws of the pinch lever and aqjust the azimuth adjustment screw to meet the required specification.

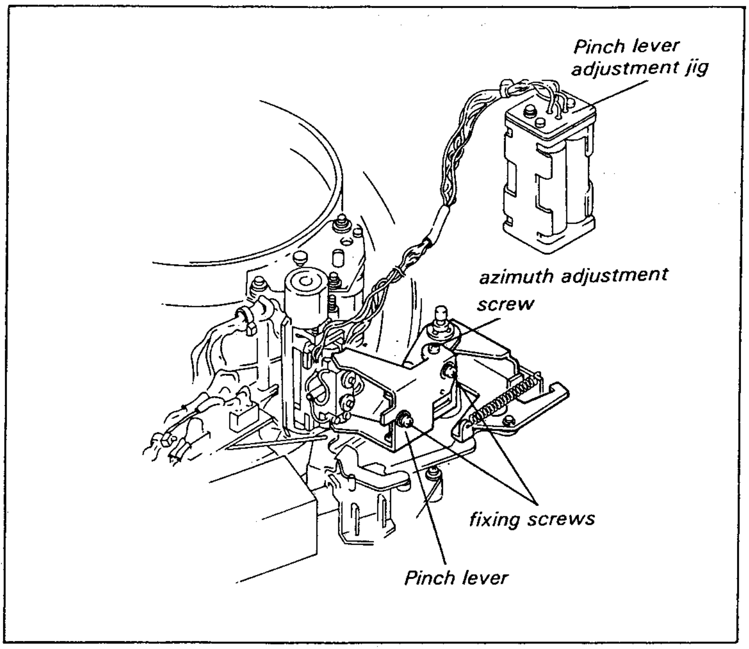
(2) After tightening the two fixing screws, check thtat the azimuth adjustment screw is thghten.

(3) Check that it meets the required specification again.


Pinch lever adjustment jig
Capstan shaft
Pinch lever


red lamp
green lamp
Pinch lever adjustment jig
A
B
C
Pinch lever
noches

Spec:
When lightly pushing the pinch lever in the direction of arrow A, check that the green and the red lamps light.


Pinch lever adjustment jig
azimuth adjustment screw
fixing screws
Pinch lever